

April 13, 2015

Objection Reviewing Officer
USDA Forest Service
Northern Region
PO Box 7669
Missoula, MT 59807

**RE: Draft Record of Decision Clear Creek Integrated Restoration Project Sent Via
Email to: appeals-northern-regional-office@fs.fed.us and via US mail.**

Pursuant to 36 CFR 218 regulations, this is an objection to the draft Record of Decision for the Clear Creek Integrated Restoration Project and final Environmental Impact Statement on the Nez Perce-Clearwater National Forests (NOTE: This project occurs on the Nez Perce National Forest portion of the two administratively combined forests). The Responsible Official is Cheryl Probert. This objection is filed on behalf of Friends of the Clearwater (Gary Macfarlane), Alliance for the Wild Rockies (Michael Garrity and Gary Macfarlane), Al Espinosa, Ashley Lipscomb, Harry Jageman, and Alan Schonefeld.

All have submitted comments on the project. Friends of the Clearwater (FOC) and Alliance for the Wild Rockies (AWR) submitted two sets of comments on the DEIS and also submitted scoping comments. Specific issues are detailed below. Also, AWR is party to another objection, which raises similar concerns.

Friends of the Clearwater (FOC) is focused on protecting the Idaho Clearwater region's wildlands and biodiversity. The Wild Clearwater Country, the northern half of central Idaho's Big Wild, provides crucial habitat for numerous rare plant and animal species, both aquatic and terrestrial. Friends of the Clearwater has a long-standing interest in the Nez Perce National Forest and the project area. Its members use the area and FOC has conducted hikes into the project area.

Alliance for the Wild Rockies (AWR) protects the Wild Northern Rockies, a unique place in the American landscape. This is the largest wildland region south of Canada--with virtually all the native plant and animal species that were here at the time of the Lewis & Clark Expedition. Vast public wildlands provide habitat for wildlife populations found nowhere else in the lower 48 including grizzly bear, gray wolf, woodland caribou, anadromous salmon and trout, and a host of lesser-known species. Alliance for the Wild Rockies members use the area.

Harry Jageman is a retired wildlife biologist who worked for the US Forest Service for over thirty years. Harry completed his master's degree in wildlife management at the University of Idaho. Since retirement he has completed his PhD in wildlife resources, studying the influence of forest management on Northern Pygmy-owls. Married with three grown children, Harry is concerned over the legacy we are leaving for future generations.

Al Espinosa is a retired fisheries biologist from the Clearwater National Forest. He spent nearly 20 years with the US Forest Service. He was a private consultant (Espinosa Consulting) for eighteen years following his career with the Forest Service. He specializes in fishery-forest interactions, fish habitat and restoration, endangered species management, and biological assessments. Al has a Masters Degree in fisheries from University Nevada Las Vegas (1968) and his Bachelor's from Humboldt State.

Ashley Lipscomb Ashley still falls in love with Clearwater country every time she hits the trail for a backpacking trip into the big Wild. Originally from the Midwest, Ashley came to Idaho in 2009 to obtain her Bachelor of Science Degree in Resource Recreation and Tourism from the University of Idaho. Ashley is a co-leader of the Palouse Broadband chapter of the Great Old Broads for Wilderness. She works as an algae project coordinator and lab manager for an aquatic bio assessment business in Moscow and is the Executive Director for the Latah Trail Foundation.

Alan Schonefeld is a resident of the Clearwater Basin and lives adjacent to the proposed Clear Creek timber sale. He is a long-term resident of the area and has explored many areas in the Clearwater Basin and adjacent areas in the Nez Perce and Clearwater National Forests.

Friends of the Clearwater (FOC) is the lead objector. The attachments and references are included on the enclosed disks in the version sent via US Mail.

Sincerely submitted,



Gary Macfarlane
(for)
Friends of the Clearwater (Lead
Objector)
PO Box 9241
Moscow, ID 83843
(208) 882-9755
gary@friendsoftheclearwater.org

Mike Garrity
Alliance for the Wild Rockies
PO Box 505
Helena, MT 59624
awr@wildrockiesalliance.org

Al Espinosa
735 Vista
Moscow, ID 83843

Harry Jageman
1228 Ponderosa Drive
Moscow, ID 83843

Ashley Lipscomb
426 East Lewis
Moscow, ID 83843

Alan Schonefeld
889 Big Cedar Road
Kooskia, ID 83539

I. FLAWED SOILS FOREST PLAN AMENDMENT AND PROCESS.

The FEIS does not fully analyze an alternative that would compare the management “flexibility” and range of options available without implementing a soils forest plan amendment, for comparison to other action alternatives. And the Region 1 Soil Quality Standards (R1 SQS) adopted by this amendment are inadequate for protecting soil productivity, as NFMA requires.

Harry Jageman stated in his DEIS comments:

The proposal to make a site specific amendment to modify regional and forest plan soil standards is self-serving and does not meet the intent of regional and forest plan guidelines. The proposal merely allows more timber harvest from previously logged areas that currently do not meet the regional guidelines. There is no good reason why these areas could not be restored to regional standards prior to additional timber harvest. This would give the public some assurance that the proposed improvements will actually work... . Once it can be shown the improvements are actually achieving soil protection goals, then and only then should additional timber harvest be considered. Please drop all timber harvest from units not currently meeting regional soil standards and schedule the necessary improvements to bring these areas up to regional standards. The Forest Service should be working to meet existing standards, instead of modifying the standards to accommodate increased levels of management activity.

Also, Friends of the Clearwater/Alliance for the Wild Rockies/The Lands Council 6/3/2013 DEIS comments stated, “The DEIS... does not analyze an alternative that won’t exceed soil standards immediately after logging. ...How does the soil amendment comply with regional soil standards? ...Why was there no alternative that excluded logging in places where soil standards are exceeded?”

The FEIS also relies upon a proposed Forest Plan amendment, the intent of which is vague but in reality, provides cover for project activities to do more soil damage than would be allowed without the amendment. The Draft ROD states:

Amendment 41 will adopt the Region 1 soil standard of 15% for detrimentally disturbed soils. This amendment will allow vegetation treatments and soil improvement activities to proceed in areas with pre-existing detrimental soil disturbance. This amendment provides the flexibility to achieve multiple resource objectives while showing an upward trend in net soil conditions.

Objectors’ comments on the DEIS included these from Al Espinosa:

This is just another effort to reduce quality standards and accountability in order to allow additional development and degradation. This strategy occurs too frequently on the Nez Perce Forest and diluted the credibility of management. The agency has presented another variation of the specious *upward trend* proposition. The change in the standard allows for more degradation with the promise that the “check is the mail” for future net improvement and significant recovery. The problem is that the “check” seldom arrives. It is time for the Nez Perce Forest to meet their Forest Plan standards without equivocation.

Also, the 6/3/2013 DEIS comments from Friends of the Clearwater/Alliance for the Wild Rockies/The Lands Council stated:

The need to allow activities to occur in areas with over 20 percent detrimental soils disturbance is precisely the reason the standard exists, to prevent that from occurring. ... (I) f any amendment would be offered, it would defer logging in the units that exceed 15 percent detrimental soil disturbance and only do real restoration work in those areas.

The Forest Service's response to these comments on this issue included:

The amendment to the Forest Plan is an administrative action. The amendment would better align Forest Plan standards with the Regional soil quality standards. Until a new Forest Plan is established, this issue will be dealt with on a site-specific, project NEPA analysis.

The soils amendment does not weaken the Forest Plan standards. The Forest Plan currently does not allow any activity, including soil restoration, in units with over 20% detrimental disturbance. This amendment will allow for achieving the vegetation purpose and need, as well as improving soil conditions. Regional soil guidance allows for activities to occur in units that are not currently meeting standards in provide a net improvement in soil quality through restoration activities. By utilizing existing skid trails and landings, there would be little to no increase in detrimental soil disturbance. (FEIS, Soils section and Appendix D). Soil improvement activities would occur concurrently with the harvest activities. We have had very good successes in achieving soils improvements with our current harvest activities.

The Forest Service is extremely disingenuous about its intent in adopting this forest plan amendment. The FEIS states that "(t)he Regional standards are more restrictive—stipulating that detrimental disturbance stay below 15% as opposed to the 20% currently prescribed in the current Nez Perce Forest Plan." What the FEIS fails to disclose, in violation of NEPA requirements, is that the "Regional Standards"—a part of the Forest Service Manual—have been U.S. Forest Service Northern Region direction in effect for over 15 years. The heading on the directive is:

FOREST SERVICE MANUAL
Missoula, Montana
FSM 2500 - WATERSHED AND AIR MANAGEMENT
R-1 Supplement No. 2500-99-1
Effective November 12, 1999

On multiple occasions these R-1 SQS have been an issue in federal courts, and the Forest Service has even taken the position that the R-1 SQS are as binding as forest plan standards. So the Forest Service claim to be accepting more restrictive standards with this amendment is a complete fabrication. And whereas the FEIS says, "The soils amendment does not weaken the Forest Plan standards" in reality it effectively **eliminates** any constraint and protection that Forest Plan Soil Standard #2 provides for this project—**over and above the protections found in the R-1 SQS added in 1999.**

Forest Plan Soil Standard #2 states in full:

A minimum of 80 percent of an activity area shall not be detrimentally compacted, displaced, or puddled upon completion of activities. This direction does not apply to permanent recreation facilities and other permanent facilities such as system roads.

The meaning of detrimental disturbance in Forest Plan Soil Standard #2 aligns well with the R-1 SQS, except the latter added a category of detrimentally burned soils. But the biggest difference between this Standard and the R-1 SQS is that while the plain meaning of the former doesn't allow management activities to result in reaching 20% DSD at any time, let alone mess around in activity areas that already violate the standard, the R1-SQS leave a wide-open door for management discretion, allowing activities in units that violate the standards as long as the agency can make a claim—no matter how outlandish—that while doing so it also is taking restorative measures that “trend” DSD downward. Such claims don't have to even commit to any amount DSD will go downward—a 1% reduction is sufficient to meet the agency's interpretation of the R-1 SQS even if existing DSD is over 50%!

The agency responds to DEIS comments saying, “This amendment will allow for achieving ...improving soil conditions.” But as it turns out, the Nez Perce National Forest (NPNF) is aware that there is no need to take the draconian step of eliminating a Forest Plan Standard to improve soil conditions, since it didn't do so with its American River/Crooked River timber sale.

The American River/Crooked River FEIS stated, “Northern Region Soil Quality Guidelines (USDA FS, 1999b) direct us to manage National Forest System lands without permanent impairment of land productivity and to maintain or improve soil quality...” In carrying out that project, the NPNF obviously saw no need for a forest plan amendment to conform to the direction in the Northern Region Soil Quality Guidelines for which it now says an amendment is needed. Under the heading “COMPLIANCE WITH FOREST SOIL QUALITY STANDARDS” that FEIS disclosed the “(n)umber of proposed activity areas estimated to have sustained detrimental soil disturbance in excess of forest plan standards using definitions of the Northern Region soil quality guidelines (USDA FS, 1999b).”

Also without such a forest plan amendment, the American River/Crooked River FEIS stated that much soil restoration would be achieved, directly contradicting the Clear Creek FEIS's justification for its forest plan amendment:

The soil restoration would reduce surface and substratum erosion problems on some system roads, and other sites, particularly on steep skid trails, poorly vegetated landings, and existing temporary roads.

Design and mitigation measures address localized areas of significant landslide risk that may be identified during project layout, and adjustment of harvest prescriptions to maintain slope stability.

Mitigation and restoration can confine soil compaction and displacement to within Forest Plan standards, and reduce the likelihood of effects to productivity, diversity, and weed susceptibility. Additional soil restoration associated with decommissioning of old roads

and treating old harvest units would also reduce the extent of cumulative effects within the project area.

The soil restoration described under soil compaction and displacement would improve long-term potential for soil wood accrual by accelerating soil stabilization and organic matter development.

Additional soil restoration is proposed under Alternatives B, C, D, and E. Recovery of soil physical properties is not expected to be complete on all treated acres, but will establish an upward trend for soil conditions for the treated sites. Activities include decompaction, recontouring, addition of organic matter, weed control, and revegetation to restore compacted and displaced soils on main skid trails, existing temporary roads, landings, and newly constructed temporary roads.

Soil restoration would consist of scarification, recontouring, stabilization for erosion control, application of organic matter, revegetation, and weed control as needed. Soil restoration can potentially improve infiltration, improve water and nutrient regimes, restore more natural water yield regimes, reduce likelihood of runoff events, reduce potential for weed invasion, stabilize slopes, and improve tree growth and vegetation establishment (Luce, 1997; Sanborn *et al.*, 1999a; Plotnikoff, *et al.*, 1999; Andrus and Froelich, 1983; Sanborn, *et al.*, 1999b; Foltz and Maillard, 2004; and Korb *et al.*, 2004.)

Also, the NPNF's more recent Doc Denny Environmental Assessment (2012) did not see any need for a forest plan amendment in order to accept complying with the Regional Soil Quality Standards: "(E)stimated DSD from the proposed activities would remain below the Regional Standard of 15% in all of the activity areas in both action alternatives."

The Forest Service has not properly identified a need to change the Forest Plan in regards to soils, which violates the 2012 NFMA Planning Rule at 36 CFR § 219.13(b)(1). The FEIS also fails to properly document how the best available scientific information was used to in the preparation of the Amendment, in violation of the Planning Rule at 36 CFR § 219.14.

We object to the real intent of this forest plan amendment, which is to remove all constraints from the Forest Service from increasing the DSD in activity areas to any amount whatsoever, as long as some mitigation or restoration actions are layered onto the increased DSD¹. **Comments on the DEIS which made this point were completely ignored, in violation of NEPA regulations.** 40 C.F.R. § 1503.4. In truth, the agency is trying to render meaningless the quantitative nature of the soils standards.

This forest plan amendment is not really just a project-level amendment. It would be repeated every time the agency proposed management actions within an activity area that already violates the Forest Plan Standard #2, or is so close that the latest proposal to log it would push DSD percentages over 15%. And if the American River/Crooked River FEIS and Forest Plan

¹ The Draft ROD reveals the intent *is* really about logging: "Amendment 41 will ...allow vegetation treatments ...to proceed in areas with pre-existing detrimental soil disturbance. This amendment provides the flexibility to achieve multiple resource objectives..."

Monitoring and Evaluation reports are is any indication that is a very high percentage of the managed portion of the NPNF.

In fact, the Nez Perce National Forest has already exhibited a pattern of such amendments:

- ⤴ Amendment 30 (Meadow Face Timber Sale)
- ⤴ Amendment 33 (Red Pines)
- ⤴ Amendment 37 (Lodge Point)

The Forest Plan, under “Summary of Analysis of the Management Situation” states:

Soil productivity will be maintained and soil erosion will be minimized through the application of best management practices, careful riparian area management, use of fish/water quality drainage objectives, and soil and water resource improvement projects. If soil productivity or erosion approach unacceptable levels, project design will be modified, more effective best management practices will be utilized, or projects will be dropped or rescheduled.

Project file document ClearCreekSoilDSD.xlsx reveals many units that not only “approach” unacceptable levels—they already exceed acceptable levels due to past activities. The EIS failed to include an action alternative that meets current Forest Plan direction in these units, restoring without causing additional DSD, in violation of NEPA.

The R-1 SQS were developed internally by the agency, without following the public processes such as Forest Planning, NEPA, or independent scientific peer review. In doing so, it has avoided these public processes from illuminating scientific and ecological deficiencies of the R-1 SQS, which we are forced to do here, at the project level.

It’s likely the Forest Service chose 15% as its upper limit on soil damage within a unit merely because it believes that modern clearcutting methods can avoid compacting more that 15% of a unit in while removing all the merchantable trees and burning the slash. USDA Forest Service, 2008b states:

The 15% change in aerial extent realizes that timber harvest and other uses of the land result in some impacts and impairment that are unavoidable. This limit is based largely on what is physically possible, while achieving other resource management objectives.

USDA Forest Service, 2008b admits that the limit is based on the fact that it is not feasible to do much less damage than 15% of an activity area while carrying out industrial logging. **Such a limit has nothing to do with the science of maintaining soil productivity.**

USDA Forest Service, 2007c cites one of the Forest Service’s own experts on soil processes, Dr. Bob Powers of the Pacific Southwest Research Station:

The Regional Soil Quality Standards (R-1 Supplement 2500-99-1) were revised in November 1999 (DEIS, A-11 (EIS Chapter 3). Manual direction recommends maintaining 85% of an activity area’s soils at an acceptable productivity potential with respect to detrimental impacts - including the effects of compaction, displacement, rutting, severe burning, surface erosion, loss of surface organic matter, and soil mass movement. This

recommendation is based on research indicating that a decline in productivity would have to be at least 15% to be detectable (Powers, 1990). (Myrtle Creek HFRA EIS at F-24.)

It is important to note that Dr. Powers is referring to separate and distinct thresholds when he talks about 15% **increases in bulk density**, which is a threshold of when soil compaction is considered to be detectable, and 15% **areal limit for detrimental disturbance**, which is the R-1 SQS upper limit on detrimental disturbance (including compaction from temporary roads and heavy equipment, erosion resulting from increased runoff, puddling, displacement from skid trails, rutting, severe burning, etc.). With that caveat, what Dr. Powers made these revealing remarks (as quoted in Nesser, 2002²):

(T)he 15% standard for increases in bulk density originated as the point at which we could reliably measure significant changes, considering natural variability in bulk density... (A)ppling the **15% areal limit** for detrimental damage is not correct... (T)hat was never the intent of the 15% limit... and **NFMA does not say that we can create up to 15% detrimental conditions**, it says basically that we cannot create significant or permanent impairment, period...

(Emphasis added.) USDA Forest Service, 2008b stated:

Powers (1990) cites that the rationale bulk density is largely based on collective judgment. The FS estimates that a true productivity decline would need to be as great as 15% to detect change using current monitoring methods. Thus the soil-quality standards are set to detect a decline in potential productivity of at least 15%. This does not mean that the FS tolerates productivity declines of up to 15%, **but merely that it recognizes problems with detection limits**. Also, a 15% increase in bulk density may not be detrimental to productivity; site and soil productivity depends on the soil and ecosystem in which it is found.

(Emphasis added.) So we have the R-1 SQS 15% areal extent limit being based on mere feasibility rather than concerns over soil productivity, and additionally we have the 15% bulk density increase limit based upon **the limitations of detection** by bulk density measurement methods—not concerns over soil productivity. The FEIS's failure to disclose this is a violation of NEPA.

We also note that it doesn't matter how sensitive the soils, how steep the land, how poor the site is for growing trees, the R-1 SQS standard is the same—15%. Truly, the R-1 SQS really *is* mostly a standard based upon feasibility of implementation and measurement detection. Page-Dumroese et al., 2000 emphasize that :

Research information from short- or long-term research studies supporting the applicability of disturbance criteria is often lacking, or is available from a limited number of sites which have relative narrow climatic and soil ranges. ...Application of selected USDA Forest Service standards indicate that **blanket threshold variables applied over disparate soils do not adequately account for nutrient distribution within the profile or forest floor depth. These types of guidelines should be continually**

² At the time, Nesser was the Soil Scientist at the Region 1 Office.

refined to reflect pre-disturbance conditions and site-specific information.

(Emphasis added.) The FEIS does not properly distinguish between the issues of soil disturbance and soil productivity. Whereas soil disturbance measures physical signs of potential soil productivity losses, the FS's measures of soil disturbance do not necessarily provide scientifically valid and reliable measures of **soil productivity**—the latter being the focus of NFMA requirements.

The R1-SQS is the only quantitative standard the agency would have for purposes of complying with NFMA's substantive mandate to insure against irreversible losses in soil productivity. The agency acknowledges the need to validate the assumptions underlying the R1-SQS thresholds for soils disturbance with regard to soil productivity. The Forest Management Handbook at FSH 2509.18 directs the FS to do validation monitoring to "Determine if coefficients, S&Gs, and requirements meet regulations, goals and policy" (2.1 – Exhibit 01). It asks what we are asking: "Are the threshold levels for soil compaction adequate for maintaining soil productivity? Is allowing 15% of an area to be impaired appropriate to meet planning goals?"

A Forest Service scientist report (Grier et al., 1989) adopted as a measure of soil productivity: "the total amount of plant material produced by a forest per unit area per year." They cite a study finding "a 43-percent reduction in seedling height growth in the Pacific Northwest on primary skid trails relative to uncompacted areas" for example. And in another Forest Service scientist report (Adams and Froehlich, 1981) states:

Measurements of reduced tree and seedling growth on compacted soils show that significant impacts can and do occur. Seedling height growth has been most often studied, with reported growth reductions on compacted soils from throughout the U.S. ranging from about 5 to 50 per cent.

USDA Forest Service 2014a states:

Management activities can result in both direct and indirect effects on soil resources. Direct and indirect effects may include alterations to physical, chemical, and/or biological properties. Physical properties of concern include structure, density, porosity, infiltration, permeability, water holding capacity, depth to water table, surface horizon thickness, and organic matter size, quantity, and distribution. Chemical properties include changes in nutrient cycling and availability. Biological concerns commonly include abundance, distribution, and productivity of the many plants, animals, microorganisms that live in and on the soil and organic detritus.

(3-279, emphasis added). The R-1 SQS and definition of DSD consider only alterations to physical properties, but not chemical or biological properties. Adoption of the R-1 SQS does not adequately consider best available science, in violation of NEPA.

One of these biological properties is partly represented by naturally occurring organic debris from dead trees. The R-1 SQS recognize the importance of limiting the ecological damage that logging causes due to retaining inadequate amounts of large woody debris, but set absolutely no limits on these losses caused by logging and slash burning.

Some chemical properties are discussed in Harvey et al., 1994, including:

The ...descriptions of microbial structures and processes suggest that they are likely to provide highly critical conduits for the input and movement of materials within soil and between the soil and the plant. Nitrogen and carbon have been mentioned and are probably the most important. Although the movement and cycling of many others are mediated by microbes, sulfur phosphorus, and iron compounds are important examples.

The relation between forest soil microbes and N is striking. Virtually all N in eastside forest ecosystems is biologically fixed by microbes... Most forests, particularly in the inland West, are likely to be limited at some time during their development by supplies of plant-available N. Thus, to manage forest growth, we must manage the microbes that add most of the N and that make N available for subsequent plant uptake. (Internal citations omitted.)

There continues to be a lack of adequate regulatory mechanisms for protecting soil productivity on the NPNF and Northern Region, as Objectors' DEIS comments pointed out in citing Lacy (2001). This violates NFMA

REMEDY:

1. Drop all proposed logging units (activity areas) that are currently over the 15% DSD standard.
2. Prepare a Supplemental EIS that analyzes alternatives which do not require deletion of Forest Plan Soil Standard #2, to compare the management "flexibility" and range of options available without implementing a soils forest plan amendment.
3. Prepare a forestwide amendment (or revise the Forest Plan) to create soil standards based on the best available science that set measureable, quantitative limits on changes to physical, chemical and biological properties of soils, and also set measureable, quantitative limits on reductions of soil productivity.

II. PROJECT NONCOMPLIANCE WITH FOREST PLAN AND REGIONAL SOIL QUALITY STANDARDS. The FEIS fails to demonstrate consistency with Forest Plan Standard #2 and even the flawed R-1 SQS—failing to disclose the existing amount of detrimental soil disturbance (DSD) within each activity area, failing to provide accurate estimates of DSD that would be attributable to project activities, and failing to provide reliable estimates of cumulative, post-project DSD in activity areas.

We fully incorporate the previous section of the Objection within this section.

The Alliance for the Wild Rockies, Native Ecosystems Council and Friends of the Clearwater 4/23/2013 DEIS comment letter stated:

Disclose the expected amount of detrimental soil disturbance in each unit after ground disturbance and prior to any proposed mitigation/remediation;

Disclose the expected amount of detrimental soil disturbance in each unit after proposed mitigation/remediation;

Disclose the analytical data that supports proposed soil mitigation/remediation measures;

In response to comment the Forest Service stated, “Unit specific detrimental disturbance information is located in the project file. The excel spreadsheet consists of 42 printed pages and will not be presented in the FEIS due to its length.” The Forest Service doesn’t explain why the FEIS needs 42 pages to disclose existing and cumulative DSD. In reality, the agency’s reluctance to disclose this information in the FEIS may be related to the public shock factor that would be caused by the color-coded display of all the units violating soil standards in project file document ClearCreekSoilDSD.xlsx. Regardless, the courts have required that EISs demonstrate consistency with such standards. Regarding soil standards, demonstrating consistency means disclosing numbers for each “activity area”—the analysis areas the agency has itself chosen for soils. NEPA and NFMA don’t care if this takes 100 pages. It was the Forest Service’s choice to propose approximately 150 units, logging alone nearly 9,000 acres—nobody would expect a skinny NEPA document to analyze and disclose all the damage.

The FEIS fails to explain how the soil survey data translate to determinations of the amount of DSD in each activity area. The project file document “SoilFieldNotes.pdf” documents the soil scientists’ observations made in the units, but nothing explains how their transect methodology conformed to the R-1 soil survey protocol documents or explains how DSD was determined from that data.

If the mitigation or restoration actions that are represented as conforming project activities to the R-1 SQS could be demonstrated to truly be effective in reducing DSD and improving soil productivity within a reasonable timeframe, we would have no objection—indeed, why would we? But the simplicity of achieving meaningful and measurable soil recovery, implied by the FEIS, is not really simple at all.

For example, the FEIS states:

Decommissioned roads are considered as returned to the productive land base through removal from the transportation system. Soil structure, water infiltration, aeration, root penetrability, and soil biological activity improvements are observed with road decommissioning techniques used on the Nez Perce-Clearwater National Forests (Lloyd et al. 2013).

The Forest Service is implying that the Lloyd et al. 2013 study demonstrates that a heavily disturbed road template can be decommissioned so that the site no longer meets the definition of DSD. But that’s not what Lloyd et al. 2013 shows. We don’t argue that the study did not find improvement in soil quality, however the researchers did not use presence or absence of DSD, as defined by the Forest Plan and the R-1 SQS, to document the improvement found. The study’s real value was showing that recovery of soil functioning was achieved by recontouring highly

disturbed old road templates rather than merely abandoning them to natural recovery. Lloyd et al. 2013 state, “(T)hese findings support the prediction that recontouring accelerates the rehabilitation of key ecohydrologic properties toward reference dynamics.” That’s “toward” recovered conditions, not recovered to natural or non-DSD conditions.

The FEIS includes the following design criteria for soils, presumably to accelerate restoration of soil functioning and reduce DSD:

For all Units ... Actions would include scarifying/decompacting soils and placement of slash, woody material, and/or duff over exposed soil. Equipment used for machine piling or mastication of activity slash would remain on designated skid trail or would be required to rehabilitate (decompact or recontour) any detrimental disturbance they cause.

We note, however, that the NPNF’s American River/Crooked River FEIS states:

Decompaction can at least **partly restore** soil porosity and productivity. Soil displacement that mixes or removes the volcanic ash surface layer reduces soil moisture holding capacity, which may be **irreversible and irretrievable**. (Emphasis added.)

NEPA requires that an EIS specify the effectiveness of its mitigations. 40 C.F.R. 1502.16. The Clear Creek FEIS fails to specify the effectiveness of its mitigation of DSD. Given that consistency with Forest Plan Soil Standard #2 and R-1 SQS must be demonstrated by accurate estimates and measures of DSD, and that the Forest Service desires the discretion to recognize no limits on amounts of activity area DSD after logging and before its “restoration” is implemented to supposedly nullify some percentage of that DSD, then any proof would have to be based upon quantitative, numerical measurements, not implications or baseless claims of improvement as found in the FEIS. Stating, “after restoration activities, these units will show an improving trend towards meeting the standard” (ClearCreekSoilDSD.xlsx) is not sufficient.

To be clear: we are not saying the mitigation and restoration will be completely ineffective. We are saying that the Forest Service does not attach specific DSD improvement percentages attributable to its methodology. Given the critical role soils provide for the functioning of ecosystems—from the nutrients for the growing of trees and other vegetation that provides not only timber but habitat structure and forage for wildlife, filtering and holding of water, and native vegetation that resists invasive species—we firmly believe that the Forest Service is recklessly risking soil productivity using vague, “the check’s in the mail” mitigation and restoration. The FEIS doesn’t demonstrate consistency with the Forest Plan soil standards or even the R-1 SQS, in violation of NFMA. 36 C.F.R. § 219.15(d).

After 28 years of implementing the Nez Perce Forest Plan (which includes Forest Plan Monitoring Requirement 2g, requiring monitoring of “Impacts of management activities on soils” and contains a “Research Need” to “Determine the effects of various levels of soil displacement and compaction on soil productivity for forest and range vegetation on the Forest”), the agency still cannot specify DSD improvement percentages to its management methodology.

The FEIS’s assertion that its management actions will result in a net improvement in percentages of DSD is arbitrary and capricious.

The draft ROD preferred alternative would approve of logging 25 units (activity areas) that are in a “Special design category—Special attention is needed for these units to remain at or below 15% DSD following project implementation.” (FEIS at 3-82.) It should be standard operating procedure—not “special design”—for logging activities to remain below 15%.

The FEIS soils analysis includes a section entitled “Data Assumption and Limitations,” which includes this statement:

The methodology outlined in the Region 1 Approach to Soils NEPA Analysis Regarding Detrimental Soil Disturbance in Forested Areas (USDA Forest Service 2009b) provides a conservative assessment of existing soil conditions (Page-Dumroese et al. 2006a), given its inherent assumptions (ocular data and soil pits).

The words “conservative assessment” don’t appear in any of those documents. The FEIS doesn’t provide a basis for saying its assessment is “conservative.” That section of FEIS goes on:

Informal comparisons found that both for single observers and between observers, category calls in this methodology have a variability of 5%. This level of survey leads to a 90%–95% confidence with error bars from 5% to 8%, depending on the amount of disturbance found. The surveys achieve statistical inference for units with either low disturbance (<7%) or moderately high disturbance (>23%) (Page-Dumroese et al. 2009).

The words “statistical inference” don’t appear in the cited USFS soil monitoring survey protocol documents. And, “category calls”? “Variability of 5%”? “90%–95% confidence?” “Error bars from 5% to 8%, depending on the amount of disturbance found?” The FEIS is discussing the limitations of its data, but without adding any understanding, resulting in just more obfuscation. This violates NEPA regulations at 40 CFR § 1502.8, which state:

Environmental impact statements shall be **written in plain language** and may use appropriate graphics **so that decisionmakers and the public can readily understand them.**

(Emphases added.) Notice it doesn’t say “EISs should use a bunch of technical terms without defining them so decisionmakers and the public are confused and intimidated.” If the writers of the FEIS are really concerned about it having too many pages, we suggest stripping out the gibberish. See the NEPA regulations guidance at 40 CFR § 1502.8, which states:

Agencies should employ writers of clear prose or editors to write, review, or edit statements, which will be based upon the analysis and supporting data from the natural and social sciences and the environmental design arts.

That section of FEIS goes on:

Field soil survey methodology based on visual observations can produce variable results among observers, and the confidence of results is dependent on the number of observations made in an area (Page-Dumroese et al. 2006a). **The existing ...values for DSD are not absolute and are best used to describe the existing soil condition.**

(Emphases added.) The DSD numbers are not “absolute?” (Dictionary definitions for “absolute” include “unquestionable.”) Yet they are “Best used to describe the soil conditions?” Meaning—best serve the Forest Service’s purpose when using questionable data?

The FEIS does not provide a statistically sound explanation how accurate the values are, of what percentage error can be expected of its existing and estimated values for DSD. This renders the estimates and measures of DSD inadequate for demonstrating consistency with Forest Plan Soil Standard #2 and R-1 SQS, in violation of NFMA.

The FEIS state that “The DSD estimates of proposed activities also assume that BMPs would be implemented” However, there are no BMPs that mitigate soil DSD over and above the mitigation provided by the project design features spelled out in Chapter 2 of the FEIS.

The FEIS states:

Temporary roads are considered 100% detrimental disturbance with reduced soil productivity until vegetation, organic matter, and hydrologic function are restored. The greater disturbance associated with temporary road construction is the displacement or mixing of the topsoil, including the Mazama ash cap, during road excavation. Temporary roads would be constructed, used, and decommissioned within 1-2 years. Road decommissioning following use would promote restoration of soil structure, water infiltration, aeration, root penetrability, and soil biological activity, as observed with road decommissioning techniques used on the Nez Perce and Clearwater National Forests. These techniques would support recovery of productivity on soils disturbed by temporary roads.

However, the Forest Service cites no **quantitative** monitoring data that demonstrates that its restoration activities have taken an activity area with DSD amounts violating a standard to an amount that no longer violates a standard.

The FEIS discloses that its DSD predictions are not very precise:

The existing and estimated values for DSD are not absolute and are best used to describe the existing soil condition. The calculation of the percentage of additional DSD from a given activity is an estimate, since DSD is a combination of such factors as existing ground cover, soil texture, timing of operations, equipment used, skill of the equipment operator, the amount of wood to be removed, and sale administration.

The FEIS states that “The DSD estimates for proposed project activities are mostly based on local monitoring and research results (Archer 2008; Reeves et al. 2011).” What the FEIS means by “local” is unclear, because Archer 2008 was actually based on monitoring on the neighboring Clearwater National Forest.

One assumption stated in the FEIS is:

Detrimental soil impacts from proposed ground-based skidding are estimated at 8%–12% (average 10%) of an Activity Area based on use of designated skid trails (Archer 2008).

Here, the FEIS misrepresents the results of Archer, 2008, in violation of NEPA. Archer shows no 8-10% range, and certainly no average of 10%. Here is Archer's summary table:

Table 2. Detrimental disturbance percent summary statistics by logging system.

Detrimental Disturbance (%)				
	Ave	SE	Range	Count
Tractor (all)	14	+/-1	7-22	13
Feller Buncher	13	+/-2	8-20	6
Cut-to-Length	14	+/-2	7-18	5
Handfall/skidder	18	+/-3	15-22	2
Cable	0	-	-	1
Skyline	3	+/-1	0-7	11

For each type of ground based logging, the average found by Archer was at least 13%, and the range was reported by Archer was "Tractor harvest led to 8 to 22% detrimental disturbance after harvest", not 8-10% as the FEIS claims.

We also point out that the project-associated DSD estimates from project file document ClearCreekSoilDSD.xlsx use only a single—and in the case for ground based logging, erroneous—value. Also, the FEIS doesn't consider how often the monitored DSD deviated significantly above the overall 14% average for ground based logging, which would give the public some indication as to the likelihood of the FS doing more than the average level of damage.

The FEIS's other cited "local" source for its predicted DSD estimates for project activities is Reeves et al. 2011. Of the data collected on the Nez Perce National Forest, Reeves et al. 2011 states, "Data was limited to two helicopter harvest units." Not exactly a sample representative of Clear Creek logging units.

The FEIS proposes that logging equipment use old skid trails (sites already damaged by previous logging activities) to avoid adding too much DSD within any given activity areas. The soil surveys already completed did not result in a spatial inventory of old skid trails, so this would require a professional soil scientist to re-inventory the unit, because they are the only specialists properly trained to identify old skid trails and other sites meeting the definition of DSD. Requiring a professional soil scientist for this step is not a commitment the FEIS makes, so we don't believe this mitigation will really be effective in limiting new DSD. Also, that design specification assumes that ground skidding patterns created by past logging (which removed trees that no longer exist) will suffice to log different trees in different locations for different project objectives, and that makes no sense at all.

The FEIS also subscribes to the theory that logging and slash treatment machines treading over previously untrodden ground but making only one pass will not result in creating DSD, stating such things as "minimal, one-pass trails occurring on undisturbed ground" and "few 'one-pass' trails occurring on undisturbed ground..." The Forest Service's belief that multi-ton logging equipment bearing down on the soil doesn't cause DSD the first time is illogical, is based on no

monitoring cited by the FEIS, and in fact is contradicted by scientific research. For example, following a study by Cullen et al., 1991 the authors concluded: "This result lends support to the general observation that most compaction occurs during the first and second passage of equipment." Page-Dumroese (1993), in a Forest Service research report investigating logging impacts on volcanic ash-influenced soil in the Idaho Panhandle National Forest, states, "Moderate compaction was achieved by driving a Grapppler log carrier over the plots twice." Page-Dumroese (1993) also cited other studies that indicated: "Large increases in bulk density have been reported to a depth of about 5 cm with the first vehicle pass over the soil." Williamson and Neilsen (2000) assessed change in soil bulk density with number of passes and found 62% of the compaction to the surface 10cm to come with the first pass of a logging machine. In fine textured soils Brais and Camire (1997) demonstrated that the first pass creates 80 percent of the total disturbance to the site. The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

The FEIS discusses units that already violate DSD percentages:

For all Units including those designated in the reuse, trending positive, and Forest Plan amendment design categories (see section 3.8.6): ...All skid trails and landings used would be decommissioned after use. Actions would include scarifying/decompacting soils and placement of slash, woody material, and/or duff over exposed soil. Equipment used for machine piling or mastication of activity slash would remain on designated skid trail or would be required to rehabilitate (decompact or recontour) any detrimental disturbance they cause.

And in another place the FEIS states, "(A)ll excavated skid trails and landings on these landtypes would be decommissioned (full recontour) and large woody material would be placed over the slope for soil stabilization." Also, "In addition, all skid trails and landings and temporary roads (see item 10 for temporary road decommissioning) would be decommissioned."

These descriptions reveal that the Forest Service wants, or believes it already has, the discretion to increase DSD even more in activity areas already in violation of DSD standards, as long as it takes some rehabilitation measures. However the Forest Service cites no **quantitative** monitoring data demonstrating that its rehabilitation measures have taken an activity area at any level of DSD to a lower level of DSD.

Some units that don't already violate DSD percentages are in a "special design" category, and: ...special attention would be needed for these units to remain at or below 15% Detrimental Soil Disturbance (DSD) following project implementation. Methods to ensure this might include locating main skid trails only on existing disturbed areas, with few "one-pass" trails occurring on undisturbed ground; using a cut-to-length forwarder system; requiring equipment used for machine piling or mastication of activity slash to remain on designated skid trails; and developing a logging system layout design that limits the amount of new detrimental disturbance. Portions of the unit could be dropped if the layout plan cannot reach the entire unit while staying under the 15% standard. The estimated amount of acres of new disturbance has been calculated for each unit and can be found in the project file.

This doesn't say that portions of units **will** be dropped if their logging plan doesn't stay under the 15% standard, it merely says, "could." Again, the Forest Service rejects soil standards as providing any real numerical limits to the soil damage their logging activities cause.

The FEIS commits to taking rehabilitation measures where previous logging activities caused excessive DSD, or where proposed logging activities would create a lot of DSD, explaining that some recovery of soil conditions or functioning would occur:

Soil improvement activities on existing disturbed areas are expected to accelerate soil recovery and result in immediate or near-term (approximately 1–5 years) improvement in fundamental soil properties (e.g., bulk density, infiltration rates, soil organic matter, carbon, and nitrogen). These improvement activities would also provide support for continued long-term recovery of soil functions and productivity.

For all harvest units, decompaction would be required on skid trails where excavation or ground disturbance has occurred or where successive passes have taken place over the same trail. Decompaction would be conducted to improve soil productivity and meet Regional soil quality standards. Decompaction would span the width of the compacted areas and extend to a depth of 10–18 inches, to effectively loosen the ground to allow water penetration and revegetation and to prevent the rocky sub-surface soils from mixing with the topsoil. The depth of decompaction should be adjusted to avoid turning up large rocks, roots, or stumps. Equipment would not be permitted to operate outside the clearing limits of the skid trail. Decompaction should be done from June 15 to October 15, unless otherwise approved. No decompaction work should be done during wet weather or when the ground is frozen or otherwise unsuitable.

Again, the Forest Service cites no **quantitative** monitoring data that demonstrates that its rehabilitation measures have taken an activity area with any DSD amounts to a lower percentage of DSD.

Getting back to the Forest Service's soil survey data and damage estimation methodology, the most comfortable conclusion we are able to arrive at is: it's not reliable. This is supported by a statement about DSD in the FEIS soils analysis: "The calculations based on the above assumptions are gross estimations and are best used to compare alternatives and develop design criteria for units that may have particular concern." In other words, the Forest Service is saying, here's our numbers, we don't really believe them, but because they reveal a lot of current and predicted soil damage, we'll add some design criteria to lessen the new damage. The FEIS fails to comply with NEPA's requirements that EISs demonstrate scientific integrity.

We get the Forest Service's point here—the soils in the area were damaged by past logging, and this next round of logging will do more damage but the project will also do some restoration. But what the agency is proposing here, without actually coming out and saying it is, they plan to log these "activity areas" repeatedly and perpetually, chronically maintaining soil productivity in a

depressed state, without disclosing the actual degree of below-natural productivity. The Forest Plan's definition of "soil productivity" is instructive here:

The capacity of a soil to produce a specific crop such as fiber and forage, under defined levels of management. It is generally dependent on available soil moisture, nutrients, and length of growing season.

Despite the agri-centric character of that definition, the implications for the myriad other resources³ that depend upon healthy soils are clear—the Forest Service's ability to sustain of them is in doubt, because they cannot even tell the public how far depressed the ability of the soil will forever be for producing the agency's favorite "crop"—timber.

USDA Forest Service, 2007 states:

Sustained yield was defined in the Kootenai Forest Plan ...as "the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without permanent impairment of the productivity of the land." Sustained yield is based on the lands' ability to produce.

That statement is on point: Since the Forest Service has no idea how much soil has been permanently impaired either within the Clear Creek project area or forestwide, "sustained yield" is an empty promise.

REMEDY:

1. Prepare a Supplemental EIS that explains how the soil survey data translate to determinations of the amount of DSD in each activity area.
2. Prepare a Supplemental EIS that discloses the amount of statistical error that exists for each type of DSD measurement and each type of DSD estimation, providing a statistically sound explanation how accurate those values are, and disclosing the percentage error expected of the existing and estimated values for DSD, and disclosing the odds of each activity area meeting the 15% DSD standard based on the particulars of each unit and logging plan.
3. Drop management activities in units (activity areas) that result in DSD amounts over 15% in "Special design category" units (and all others) even if the agency considers the DSD violation to be temporary or only over 15% until immediately after active rehabilitation actions.
4. Perform a scientific study in response to the Forest Plan "Research Need" to "Determine the effects of various levels of soil displacement and compaction on soil productivity for forest and range vegetation on the Forest."
5. Prepare a Supplemental EIS that corrects all DSD estimation errors based on the FEIS's misrepresenting Archer, 2008 and Reeves et al., 2011, and that corrects the error assuming that only one pass by machines on uncompacted soil results in no DSD.

³ "Soil is a critical component to nearly every ecosystem in the world, sustaining life in a variety of ways—from production of biomass to filtering, buffering and transformation of water and nutrients." Lacy, 2001.

6. Prepare a Supplemental EIS that discloses the Forest Service anticipates logging all “activity areas” repeatedly and perpetually, using the best available science to analyze and disclose the expected range of chronic, below-natural productivity this would cause, and so informing public expectations of what is meant by “sustained yield” of timber.

7. Perform a scientific study gathering quantitative DSD monitoring data that demonstrates that rehabilitation measures have taken an activity area with DSD over 15% to a percentage of DSD below 15%. Perform these studies on units already approved for logging in previous decisions, focusing on areas where the Forest Service recognized that they needed to reduce DSD amounts after logging activities were completed in order to meet forest plan standards.

8. For all harvest units, coarse woody material appropriate to the site shall be retained, meeting the Graham et al. 1994 Regional guidance for organic matter but taking the FEIS’s guidelines and changing them to operating standards [e.g., retaining coarse (> 3 inches diameter) woody material Drier habitat types amounts no less than 7–15 tons/acre for Douglas-fir, grand fir, and ponderosa pine types. Moisture habitat types no less than 17–33 tons/acre. Approximately 14–28 standing trees will be retained for future down wood recruitment. Retention levels on the higher end of the range are mandatory for proposed units with low existing woody material. All snags or other designated retention trees felled for safety reasons will be left in the unit.

III. FAILURE TO ANALYZE AND DISCLOSE THE CUMULATIVE WATERSHED LEVEL IMPLICATIONS OF CHRONICALLY COMPACTED OR OTHERWISE DETRIMENTALLY DISTURBED SOILS.

We fully incorporate the previous two sections of the Objection within this section.

The Forest Service’s “analysis area” for soil productivity “are the individual treatment units (variable acres) and associated skid trails, landings, and temporary roads within the 43,700-acre project area.” This means that the “analysis area” for soils varies from alternative to alternative, depending upon each specific alternative’s proposed action sites. And this means that there is no analysis area whatsoever for the no action alternative. The agency’s logic goes something like this: soil effects are only site-specific, and impacts only occur within the proposed “individual treatment units and associated skid trails, landings, and temporary roads.” They argue that there are no indirect effects of damaged soils, outside those specific locations. And therefore certainly no cumulative effects from previously damaged soils, outside those specific locations.

From USDA Forest Service, 2008f:

Many indirect effects are possible if soils are detrimentally-disturbed... Compaction can indirectly lead to decreased water infiltration rates, leading to increased overland flow and associated erosion and sediment delivery to stream. Increased overland flow also increases intensity of spring flooding, degrading stream morphological integrity and low summer flows.

But no matter how compacted the soils are outside the proposed “individual treatment units (variable acres) and associated skid trails, landings, and temporary roads” the fact that reduced water infiltration in those other locations is contributing to increased water yield and erosion during storm events—so what? And if the previous logging in those other locations resulted in a scarcity of legacy wood that, if present, would be incorporated into the soil and hold water and transmit nutrients for the next generation’s timber stand—so what?

And if those previously disturbed areas outside the proposed “individual treatment units (variable acres) and associated skid trails, landings, and temporary roads” have become prime growing sites for noxious weeds—many species of which are adapted well to damaged, disturbed sites and some of which actively inhibit native vegetation from recovering and therefore the sites exhibit reduced productivity—so what?

The FEIS says, “Potential soil restoration opportunities throughout the project area were assessed, with a focus on old skid trails, landings, and roads.” But only if those sites are proposed for new disturbance, i.e., logging.

It’s like doing an analysis for vegetation, analyzing only the impacts on the trees to be logged.

“Past management activities in the analysis area have caused Detrimental Soil Disturbance (DSD) and decreased soil productivity.” But the FEIS doesn’t disclose how widespread this DSD is, only focusing on the proposed “individual treatment units (variable acres) and associated skid trails, landings, and temporary roads” in violation of NEPA. The FEIS fails to consider and use its own best available science, in violation of NFMA and additionally, NEPA’s requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

The 4/23/2013 DEIS comment letter from Alliance for the Wild Rockies, Native Ecosystems Council and Friends of the Clearwater stated:

Please disclose the link between current and cumulative soil disturbance in project area watersheds to the current and cumulative impacts on water quantity and quality.

The Forest Service’s response was: “Soil disturbance can lead to reduced water infiltration, increased surface flow, and erosion. This eroded soil material could enter stream channels reducing water quality.” So the Forest Service responded to a question about specific cumulative watershed-level damage that has occurred in the project area with a very broad, non-specific and general statement that pretty much comes from Soils 101.

The Forest Service response concluded with “Effects to water quality and soils were addressed in the Soils and Watershed sections of the DEIS and FEIS.” But the Forest Service misses the point of the comment, which is that the analysis of cumulative soil disturbance in project area watersheds isn’t there—of the 43,700-acre project area the FEIS only covers past and proposed soil damage in the proposed “individual treatment units (variable acres) and associated skid trails, landings, and temporary roads.”

The commenters were asking the Nez Perce National Forest to do an analysis similar to what they did for the American River/Crooked River project FEIS, which stated:

Cumulative effects may also occur at the landscape level, where large areas of compacted and displaced soil affect vegetation dynamics, runoff, and water yield regimes in a subwatershed. About 4,849 acres are currently estimated to have sustained detrimental compaction or displacement in the American River watershed due to logging, mining, or road construction. ... About 4,526 acres are currently estimated to have sustained detrimental compaction or displacement in the Crooked River watershed due to logging, mining, and road or trail construction.

(Emphasis added.) The American River/Crooked River FEIS also disclosed:

An estimated 73 percent (208) of past activity areas on FS lands in American River (and an estimated 69 percent (166) of past activity areas on FS lands in Crooked River) today would show detrimental soil disturbance in excess of 20 percent.

American River (and most of Crooked River) is considered similar in soils and logging history to Red River, where 80 percent of sampled tractor logged activity areas did not meet Forest Plan standards. In many instances, these impacts occurred prior to forest plan implementation, but monitoring of more recent activities shows inconsistent improvement in practices. This degree of soil damage is consistent both with other Forest monitoring (USDA FS 1988a, 1990, 1992), and research (Krag, 1991; Froelich, 1978; Davis, 1990, Alexander and Poff, 1985).

Indirect effects of soil surface and substratum erosion include effects to vegetation and hydrologic processes.

The point of this is not to flog the Forest Service for all the soil damage on the Nez Perce National Forest. Our point is to express our objection to the Forest Service's failure to incorporate the best available science on this subject and to have the full extent of soil restoration needs in these watersheds made known. USDA Forest Service, 2009c states, in regards to project area sites where DSD soils were not to be restored by active management: "For the ...severely disturbed sites,... "no action" ...would **create indirect negative impacts by missing an opportunity to actively restore damaged soils**. These sites would naturally recover in time, approximately 60 to 80 years." (Emphasis added.)

Much of the omitted best available science is from the Forest Service's own experts, and not just in the American River/Crooked River FEIS. The Bitterroot National Forest admits that subwatersheds which have high levels of existing soil damage could indicate a potential for hydrologic and silviculture concerns. (USDA Forest Service, 2005b, p. 3.5-11, 12.) The Idaho Panhandle National Forests (USDA Forest Service, 2007c) acknowledges that soil conditions affect the overall hydrology of a watershed:

Alteration of soil physical properties can result in loss of soil capacity to sustain native plant communities and reductions in storage and transmission of soil moisture that may affect water yield and stream sediment regimes. (P. 4-76, emphasis added.)

Nothing in the FEIS's watershed analysis section specifically addresses the hydrological implications of the cumulative soil damage caused by past management added to timber sale-induced damage in project area watersheds. The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

USDA Forest Service, 2009c states:

Compaction can decrease water infiltration rates, leading to increased overland flow and associated erosion and sediment delivery to streams. Compaction decreases gas exchange, which in turn degrades sub-surface biological activity and above-ground forest vitality. Rutting and displacement cause the same indirect effects as compaction and also channel water in an inappropriate fashion, increasing erosion potential.

Kuennen et al. 2000 (a collection of Forest Service soil scientists) state:

An emerging soils issue is the cumulative effects of past logging on soil quality. Pre-project monitoring of existing soil conditions in western Montana is revealing that, where ground-based skidding and/or dozer-piling have occurred on the logged units, soil compaction and displacement still are evident in the upper soil horizons several decades after logging. Transecting these units documents that the degree of compaction is high enough to be considered detrimental, i.e., the soils now have a greater than 15% increase in bulk density compared with undisturbed soils. Associated tests of infiltration of water into the soil confirm negative soil impacts; **the infiltration** rates on these compacted soils are several-fold slower than rates on undisturbed soil.

...The effects of extensive areas of compacted and/or displaced soil in watersheds along with impacts from roads, fire, and other activities are cumulative. A rapid assessment technique to evaluate soil conditions related to past logging in a watershed is based on a step-wise process of aerial photo interpretation, field verification of subsamples, development of a predictive model of expected soil conditions by timber stand, application of this model to each timber stand through GIS, and finally a GIS **summarization of the predicted soil conditions in the watershed.** This information can then be combined with an assessment of road and bank erosion conditions in the watershed to give a holistic description of watershed conditions and to help understand cause/effect relationships. **The information can be related to Region 1 Soil Quality Standards⁴ to determine if, on a watershed basis, soil conditions depart from these standards.** Watersheds that do depart from Soil Quality Standards can be flagged for more accurate and intensive field study during landscape level and project level assessments. **This process is essentially the application of Soil Quality Standards at the watershed scale with the intent of maintaining healthy watershed conditions.** (Kuennen et al., 2000; emphasis added)

Kootenai National Forest hydrologist Johnson, 1995 noted this effect from his reading of the scientific literature: "Studies by Dennis Harr have consistently pointed out the effects of the compacted surfaces (roads, skid trails, landings, and firelines) on peak flows." Elevated peak

⁴ This is the same Soil Quality Standards that the Clear Creek project soils forest plan amendment claims to adopt.

flows harm streams and rivers by increasing both bedload and suspended sediment, which is not adequately analyzed in the FEIS's watershed analysis.

It is clear that the R-1 Soil Quality Standards intend the Forest Service to consider the cumulative effects of past and proposed soil disturbances to assure that soil productivity will be maintained. This includes impacts from activities that include logging, motorized vehicle use, livestock grazing, etc. Such cumulative effects analysis found in the Soil and Water Conservation Practices Handbook (FSH 2509.22), which states:

Practice 11.01 – Determination of Cumulative Watershed Effects

OBJECTIVE: To determine the cumulative effects or impact on beneficial water uses by multiple land management activities. Past, present, or reasonably foreseeable future actions in a watershed are evaluated relative to natural or undisturbed conditions. Cumulative impacts are a change in beneficial water uses caused by the accumulation of individual impacts over time and space. Recovery does not occur before the next individual practice has begun.

EXPLANATION: The Northern and Intermountain Regions will manage watersheds to avoid irreversible effects on the soil resource and to produce water of quality and quantity sufficient to maintain beneficial uses in compliance with State Water Quality Standards. Examples of potential cumulative effects are: 2) excess sediment production that may reduce fish habitat and other beneficial uses; 3) water temperature and nutrient increases that may affect beneficial uses; 4) compacted or disturbed soils that may cause site productivity loss and increased soil erosion; an 5) increased water yields and peak flows that may destabilize stream channel equilibrium.

IMPLEMENTATION: As part of the NEPA process, the Forest Service will consider the potential cumulative effects of multiple land management activities in a watershed which may force the soil resource's capacity or the stream's physical or biological system beyond the ability to recover to near-natural conditions. A watershed cumulative effects feasibility analysis will be required of projects involving significant vegetation removal, prior to including them on implementation schedules, to ensure that the project, considered with other activities, will not increase sediment or water yields beyond or fishery habitat below acceptable limits. The Forest Plan will define these acceptable limits. The Forest Service will also coordinate and cooperate with States and private landowners in assessing cumulative effects in multiple ownership watersheds.

Booth, 1991 further explains the relationship between soil quality conditions and hydrology:

Drainage systems consist of all of the elements of the landscape through which or over which water travels. These elements include the soil and the vegetation that grows on it, the geologic materials underlying that soil, the stream channels that carry water on the surface, and the zones where water is held in the soil and moves beneath the surface. Also included are any constructed elements including pipes and culverts, cleared and compacted land surfaces, and pavement and other impervious surfaces that are not able to absorb water at all.

...The collection, movement, and storage of water through drainage basins characterize the hydrology of a region. Related systems, particularly the ever-changing shape of stream channels and the viability of plants and animals that live in those channels, can be very sensitive to the hydrologic processes occurring over these basins. Typically, these systems have evolved over hundreds of thousands of years under the prevailing hydrologic conditions; in turn, their stability often depends on the continued stability of those hydrologic conditions.

Alteration of a natural drainage basin, either by the impact of forestry, agriculture, or urbanization, can impose dramatic changes in the movement and storage of water. ...Flooding, channel erosion, landsliding, and destruction of aquatic habitat are some of the unanticipated changes that ...result from these alterations.

...Human activities accompanying development can have irreversible effects on drainage-basin hydrology, particularly where subsurface flow once predominated. Vegetation is cleared and the soil is stripped and compacted. Roads are installed, collecting surface and shallow subsurface water in continuous channels. ...These changes produce measurable effects in the hydrologic response of a drainage basin.

The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a Supplemental EIS that discloses the cumulative level of DSD over all acres of the project area caused by past management. Disclose these numbers for each subwatershed.
2. Prepare a Supplemental EIS that discloses the link between current and cumulative soil DSD in project area watersheds to the current and cumulative impacts on water quantity and quality, incorporating the best available science.
2. Prepare a Supplemental EIS that incorporates the best available science on this subject and to have the full extent of soil restoration needs in these watersheds made known.

IV – INADEQUATE RANGE OF ALTERNATIVES

The Forest Service has not examined a reasonable range of alternatives as required by NEPA and has used a narrowly defined purpose and need to reject other reasonable alternatives. The Forest Service cannot define the purpose and need so narrowly as to preclude all other reasonable alternatives. The agency also failed to adequately respond to public comment in not evaluating an appropriate range of alternatives.

For example, FOC and AWR noted in comments on scoping:

The DEIS should fully analyze one or more action alternatives that don't build new roads or log. ... Given current conditions, activities that negatively affect water quality (roadbuilding and logging) should not be considered in every action alternative. The Forest Plan water quality and fish habitat requirements suggest alternatives of this sort must be evaluated and considered.

FOC and AWR noted in their DEIS comments:

The DEIS does not include an action alternative that stays out of old growth (so-called improvement cuts); it does not fully analyze a watershed restoration alternative; it does not analyze an alternative that would build no new roads; ... These are only some of problems with the DEIS in terms of alternatives. In sum, DEIS doesn't analyze a reasonable alternative in terms of logging and restoration. All action alternatives are massive in the scale of change.

Harry Jageman noted in his comments:

For example, there would be no need for additional NEPA if the Forest Service included an alternative to fix problem roads and culverts and decommission all problem roads. Such an alternative could include other non-controversial items such as the 1,887 acres of precommercial thinning, 41 acres of grass restoration, and 1,371 acres of prescribed fire. Perhaps even some timber harvest could be scheduled in drainages which are truly meeting Forest Plan goals for water quality, fish and wildlife.

There are particularly telling examples we detail below.

- 1) There is no alternative that does not cut in old growth (MA 20). Current forest plan direction does not allow logging until the 10 decade. They are to be protected from fuel wood gathering and precommercial thinning. Thus, improvement cuts are not allowed (Forest Plan page III-57). However, an amendment applies to every single action alternative that allows cutting in old growth, contrary to current plan direction (see FEIS 1-14 and 1-15), euphemistically called "improvement cuts." (NOTE: More on this can be found in other objection points dealing with wildlife).
- 2) There is no real restoration alternative that only or even primarily focuses on watershed restoration. No alternative that uses existing roads only. The least impactful alternative in terms of roads is Alternative D and it constructs just over 17 miles of ostensibly temporary roads. However, watershed improvement is listed a major reason for this project. (FEIS page 1-6).
- 3) A reasonable suggestion was made by Friends of the Clearwater Board Member Al Espinosa that the Forest Service present and evaluate an alternative in the neighborhood of 15 to 30 MMBF. He noted, "You need to present and evaluate a timber harvest alternative in the neighborhood of 15 to 30 mmbf." This suggestion was ignored by the Forest Service claiming they had done that in a dismissed alternative that did not have openings larger than 40 acres. The suggestion by Mr. Espinosa did not mention the 40 acre harvest limit.

Listed below are some things that should have influenced alternative development. These things were brought up in public comment, but ignored by the Forest Service.

- Drop Units not meeting regional soil standards - Restore without more logging
- Drop all units and road construction in landslide prone areas
- Drop regeneration harvest of all units that have not reached culmination of mean annual increment
- Drop Improvement harvest in old growth stands – Change to hand methods and/or prescribed fire
- Limit harvest to pose less risk to water quality and aquatic resources.
- Limit harvest to pose less risk to fish and wildlife resources and regionally recognized species of concern.
- Drop units not meeting the Peek et al. 1987 management guidelines for moose.
- Drop all units in management area 21 on slopes over 35% and limit the 5% per decade acreage calculation to lands under 35%. The 5% limit calculation and 210 year rotation are limited to slopes under 35% in this management area. Slopes over 35% are considered unsuitable for timber management.

In other words, there was no alternative that meets the existing Nez Perce Forest Plan, in violation of NFMA. 16 U.S.C. § 1604(i).

The Seventh Circuit recently explained:

No decision is more important than delimiting what these "reasonable alternatives" are. . . . One obvious way for an agency to slip past the strictures of NEPA is to contrive a purpose so slender as to define competing "reasonable alternatives" out of consideration (and even out of existence). . . . If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the EIS cannot fulfill its role. *Simmons v. United States Army Corps of Engineers*, 120 F.3d 664, 666 (7th Cir. 1997).

This FEIS follows that pattern mentioned by the Court. In coming up with the purpose and need, the agency has defined the issues to preclude a reasonable array of alternatives, including those mentioned above.

“[A]n agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative . . . would accomplish the goals of the agency's action, and the EIS would become a foreordained formality.” *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991), cert. denied, 502 U.S. 994, 112 S. Ct. 616 (1991). See also *Ayers v. Espy*, 873 F. Supp. 455, 467-68 (D. Colo. 1994) (rejecting timber sale EA because USFS considered only even-age management).

In *Simmons*, (cited above) a city applied to the Army Corps for a permit to build a dam, defining the purpose as supplying two water users from a single source. The court noted: “As a matter of logic, however, supplying Marion and the Water District from two or more sources is not absurd--which it must be to justify the Corps' failure to examine the idea at all.” *Id.* at 669.

“An alternative may not be disregarded merely because it does not offer a complete solution to the problem.” *Citizens Against Toxic Sprays v. Bergland*, 428 F. Supp. 908.

933 (D. Or. 1977). As one court explained, “[o]bviously, any genuine alternative to a proposed action will not fully accomplish all of the goals of the original proposal. One of the reasons that Congress has required agencies to set out and evaluate alternative actions is to give perspective on the environmental costs, and the social necessity, of going ahead with the original proposal.” *Town of Matthews v. United States Dept of Transp.*, 527 F. Supp. 1055, 1058 (W.D.N.C. 1981).

In *California v. Block*, 690 F.2d 753, 767-68 (9th Cir. 1982), the court held that the agency had not considered an adequate range of alternatives in its review of National Forest land to determine how to allocate that land among management categories. None of the alternatives designated more than 33 percent of the land in wilderness categories and less than 37 percent of the land in nonwilderness categories, even though all of the acreage considered met the criteria for wilderness designation. The court noted that the selection of alternatives dictated an “end result” in which nonwilderness designations exceeded wilderness designations by a substantial margin, and stated, “[r]ather than utilizing the Final EIS as an instrument for airing the issue of resource demand, the Forest Service instead shrouded the issue from public scrutiny behind the claim of administrative expertise.” *Id.* at 768.

In this case, the Forest Service has failed to provide a reasonable range of alternatives in the FEIS, in violation of clear and established caselaw.

REMEDY:

1. Prepare a supplemental EIS that meets NEPA requirements .

V – CUMULATIVE IMPACTS WERE INADEQUATELY ANALYZED

Harry Jageman noted in his comments:

The cumulative effects analysis is weak or non-existent for all wildlife species. A cumulative effects analysis should have at least been completed for the Clear Creek drainage. The fact that private land data is not readily available is no excuse for not conducting a cumulative effects analysis. The results of the analysis likely would have been much different if the impacts of past and proposed activities on nearby private lands had been included in the wildlife analysis. ...

Dropping private lands for the analysis is not appropriate for considering cumulative effects and the overall importance of forest service lands for the individual species. The condition of the private land should have been at least discussed for the entire Clear Creek drainage. ...

Species get gradually eliminated and placed at risk a project at a time. That is why impacts from each individual projects need to be evaluated site specifically and that agencies need to make scientifically sound estimates of cumulative effects. No real cumulative effects analysis has been done nor have any site specific estimates of population loss for each of the alternatives been conducted. Habitat loss has been used as a proxy for population impact, but even that does not appear to have been accomplished in a realistic and professional manner.

FOC and AWR noted in their comments:

Specifically, neither the Selway and Middle Fork Clearwater Rivers Subbasin Assessment nor the watershed assessment document have gone through the NEPA analysis and decision process to look at a range of alternatives or to consider cumulative impacts. It has not been adopted into the forest plan though the DEIS vegetation goals and DFCs are based on its “recommendations.” (See page I-5). This is crucial because no alternatives to these new DFCs have been considered even though they are not part of the forest plan. The cumulative effects of that change in direction has not been analyzed either. ...

How can cumulative impacts be adequately considered when the analysis of logging analyzed is limited to the national forests only (page 3-137)? What about the fact that non system roads were not analyzed in terms of road density calculations? What about the lack of analysis of impacts from national forest logging on Big Cedar Creek in terms of sediment even though logging is proposed there? What about the analysis for sediment at the mouth of Clear Creek only being from the national forest? How is this a cumulative impacts analysis? This is a particularly important issue as there are downstream interests, including private residences and a fish hatchery, which could be affected by impacts to water quality in Clear Creek (including sediment and temperature) from this timber sale and other cumulative actions. ...

In essence, the DEIS fails to look at habitat actually used by the species like fisher, marten, goshawk, black-backed woodpeckers, and pileated woodpeckers. Forest plan monitoring has not been done (or reported) and this may be a reason for the inconsistency with the DEIS analysis of wildlife. Without on-the-ground field work, the agency cannot adequately project impacts to species either on a site-specific or cumulative level.

The DEIS ignores the adjacent private land in terms of impacts to wildlife species. This fails a cumulative impact analysis.

Al Espinosa noted in his comments:

The analysis of cumulative effects was flawed and incomplete. The outdated, inaccurate NEZSED model was used for Forest Service proposed activities. However, several significant actions were not evaluated: Eastside Allotment (livestock grazing), Clear Ridge Road Decommissioning, timber harvest of Idaho state lands, and private land harvest. A credible cumulative effects analysis has to be conducted.

The cumulative effects of past actions that cause present effects, along with the indirect and direct effects of the proposed action, must be analyzed for the environmental impact likely to occur. 36 C.F.R. 220.4(f). “An EIS must include a useful analysis of the cumulative impacts of past, present and future projects in sufficient detail to be useful to the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts.” *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d 797, 814

(9th Cir. 2005) (internal quotations omitted). Regardless of who or what caused the past impacts, the cumulative impacts of all actions must be analyzed: “NEPA requires an agency to consider the environmental impact that results from the incremental impact of the action when added to other past, present and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” *Id.*

The analysis of cumulative effects was incomplete and fatally flawed because it did not look at several important factors, noted above. For one, the problematic NEZSED model was used for the Clear Creek proposed activities (see Objection Points VII, VIII, IX and X as well). The weaknesses in this model are that it greatly underreports sediment events because it doesn’t take into account mass wasting or storm events.

Also, regarding watershed and fishery issues, the analysis stops at the national forest boundary. It does not take into account the cumulative impact of actions adjacent to the national forest in the Clear Creek watershed. It does not take cumulative impacts from other planned activities (Johnson Bar Salvage), which would have a tremendous effect on the Middle Fork Clearwater, a Wild and Scenic River. Clear Creek empties into the Middle Fork Wild and Scenic River as well. The failure to consider grazing on the national forest in the project area, adjacent other ownership grazing, logging or other development again shows the lack of a proper cumulative impact analysis. System roads are not evaluated nor are impacts, on either a site-specific or cumulative level, for terrestrial species.

Thus, cumulative impacts are not properly assessed on either the Clear Creek or the Middle Fork Clearwater watersheds. Cumulative impacts are not assessed for wildlife either.

REMEDY:

1. Prepare a supplemental EIS that meets NEPA requirements for cumulative impact analysis.

VI – FAILURE TO MEET FEDERAL ADVISORY COMMITTEE ACT (FACA), NEPA AND COLLABORATIVE FOREST LANDSCAPE RESTORATION ACT (CFLRA)

We strongly object to the manner in which the Clear Creek project was developed. The evidence suggests that the proposal has been developed jointly by the Clearwater Basin Collaborative (CBC) and the Forest Service, a violation of the Federal Advisory Committee Act (FACA). In fact, in several locations in both the DEIS and FEIS the Forest Service refers to the CBC as their “partners” in the development of this proposal. When criticized for use of this term in the document the Forest Service responded that “The term “partner” was used as a courtesy to the CBC members who devoted a great deal of time (much of which was unpaid) towards providing feedback” (Appendix L-19).

FOC's and AWR's comments noted:

The development of this proposal apparently stems from the Clearwater Basin Collaborative. What the DEIS does not answer is whether this group complies with the Federal Advisory Committee Act. Indeed, the agency and USDA have been evasive on (sic) that topic. The DEIS tells the public this group is a "partner" and has been given special authority in designing this proposal not afforded to other citizens.

The second major concern is duplication of effort. The CBC is funded through tax dollars from the Forest Service (largely) yet its role seems little different than the Forest Service. ...

Harry Jageman's comments noted:

Federal Advisory Committee Act (FACA)

There appear to be violations of the Federal Advisory Committee Act (FACA) in the development of the proposal. According to the Federal Advisory Committee Act "the function of advisory committees should be advisory only, and that all matters under their consideration should be determined in accordance with law, by the official, agency or officer involved." As evidenced by several statements in the DEIS, the relationship between the forest service and the Clearwater Basin Collaborative (CBC) has not followed FACA guidelines. Instead of the advisory role that is required by FACA, the CBC has been considered a "**partner**" and has been given both **decision** and **oversight responsibilities** for many aspects of the Clear Creek Integrated Restoration Project.

For example, it is stated on page vii of the DEIS (highlights added for emphasis) that: "In 2010, the Clearwater Basin Collaborative (CBC) in **partnership** with the Nez Perce-Clearwater National Forests produced a comprehensive restoration strategy..." It is further stated on DEIS page 1-2 in reference to the restoration strategy "At the heart of the proposal was the Clear Creek landscape, **selected** as a priority for treatment **by the Forests and the CBC**". Again on page 1-2 it is stated: "The development of desired conditions for the Clear Creek project was **periodically reviewed by the CBC** for consistency with the CFLRP and to ensure that the proposal was socially, ecologically, and economically robust." On page 1-12 it is stated that "The expenditure of CFLRA funds that will be used to implement and monitor this project **will be reviewed** for consistency by the CFLRP strategy group, **composed of Forest Service and CBC members**."

As further evidence that the relationship of the CBC to the Forest Service is not one of an advisory role, consider how the general public and other routine Forest planning participants are treated during the planning process compared to the CBC. Members of the CBC are allowed to participate in the development of desired conditions for the planning area, select areas of emphasis, review interdisciplinary team outputs and perform and/or direct implementation and monitoring efforts. Meanwhile, others are only allowed to comment on the proposals developed jointly by the CBC and the Forest Service. Consider this statement from page 1-2 of the

DEIS: “In the spirit of transparency, these same desired conditions were also shared with and input solicited from other routine Forest planning participants (e.g. Friends of the Clearwater and Alliance for the Wild Rockies.)”

The relationship of the CBC and the Forest Service raises many additional questions. First, has the CBC been designated as a federal “advisory committee”? If not, why not and what is its clearly defined purpose? Has the establishment, purpose and charter of the CBC as a federal advisory committee been listed in the Federal Register as required by law? Why is the CBC needed when functions assigned to the CBC like ecological assessment, selection of project locations and monitoring have all been accomplished by the Forest Service historically and isn’t this a duplication of effort rather than an advisory role? Shouldn’t these tasks be more appropriately accomplished by the agency?

Consider the following facts regarding the proposal and how the CBC has largely influenced the Draft Record of Decision. First, at a proposed 85 million board feet of timber the project is likely the largest proposed timber sale on the Nez Perce/Clearwater in the last 40 years. The desire to significantly increase timber harvest has been publicly stated by CBC members and their involvement is strongly reflected in the size and scope of the proposal. Second, comments from the general public have generally been ignored during the NEPA process. There have been no changes in the proposed alternatives between the DEIS and FEIS despite several requests from the public for a more moderate proposal. In fact, the selected alternative is generally the same alternative originally developed as a joint venture of the CBC and Forest Service prior to the initiation of the NEPA process. At 85 million board feet, it is the largest of the three proposed action alternatives, which are also quite large (62 and 75 million board feet).

The response to public comments section (Appendix L) really displays how reluctant the Forest Service has been to go against the wishes of the CBC. In all cases, comments from the public have been ignored and the response to public comment has largely been to add more verbiage to the FEIS that will help the agency defend the jointly developed proposal in court. This is not a public involvement process, but rather a pro forma exercise done largely to meet the legal requirements of NEPA of a previously agreed upon decision.

By way of background, in May 2008, United States Senator Mike Crapo sponsored the formation of the Clearwater Basin Collaborative, although discussions and meetings of the group apparently occurred before then, according to meeting minutes obtained through the Freedom of Information Act (FOIA) That 23-member group was apparently formed by invitation only from Senator Crapo and includes several individuals with a strong interest in resource development and motorized recreation use. (See Attachment 1 obtained via FOIA⁵).

⁵ Note: Friends of the Clearwater never received an invitation as erroneously alleged on page 6 in the notes dated December 19, 2007. Further, Friends of the Clearwater could not have received an invitation before May 7, 2008, as that is when the invitations from Senator Crapo were sent. Friends of the Clearwater did

There are interlocking issues of compliance with NEPA, FACA and the CFLRA regarding Clear Creek. The CBC, which is running the CFLRA program that encompasses the Clear Creek timber sale, was by invitation from Senator Crapo. The Clearwater Basin Collaborative (CBC) has worked outside of the public eye in developing the Clear Creek proposal. There have only been after-the-fact articles about the group's meetings and its proposal for funding under the CFLRA. While the group claims its meetings are open to the public, these meetings are never announced to the public other than brief notices on their website, which are often not far in advance of the meeting, and the meetings occur at times generally not convenient to the public (8:30 AM to 3:30 PM). Further, minutes are not up-to-date (see http://www.clearwaterbasincollaborative.org/?page_id=38). The Collaborative Forest Landscape Restoration Program (CFLRP) requires that it "be developed and implemented through a collaborative process that . . . is transparent and nonexclusive" among other things. (Omnibus Public Land Management Act of 2009; PL 111-11; Section 4003(c)(2)).

Citizens who fully engage in the NEPA process have the right to expect that decisions will be made after an objective analysis of alternatives (40 CFR 1500). Participation in a collaborative should not lead to insider decision-making or special privileges such as promises that the Forest Service will implement their ideas. Given the Forest Service's commitment to the CBC, even prior to passage of the CFLRA, it is hard to believe that an understanding wasn't reached to rubber stamp the recommendations of the group. Indeed, a question and answer discussion with former Forest Service Chief Dale Bosworth and Rick Brazell, the supervisor of the Clearwater and Nez Forest National Forests at the time, seems to indicate the CBC's recommendations will be approved. The CBC minutes of October 8, 2009 documents this discussion. The minutes note:

(Q) How do you suggest we transition from consensus to action? (R) This group needs to come to the consensus on the action you want done and then it's the job of the FS to carry out that action. If you do come to consensus among yourselves and with FS, then the project will happen.

This statement was made well before scoping on the Clear Creek Project. Equally problematic is an excerpt from an article about Senator Crapo's Clearwater collaborative, written by the Lewiston Tribune's Eric Barker on May 30 2008:

Tom Tidwell, regional forester in charge of national forests in northern Idaho and western Montana, pledged to work to implement whatever the groups come up with. He said anything done on Forest Service land will still have to go through the agency's public process. But he said having broad agreement up front will make the process smoother. "What ever comes out of this effort we are going to be supportive of it," he said.

This is a tacit admission, prior to scoping under the NEPA ever began on Clear Creek, that there would not be an objective analysis of other alternatives prior to a decision being made as is required by NEPA. The quote merely gives lip service to NEPA, stating

not receive that invitation. This discrepancy as to when the process began and who was invited calls into serious question the integrity of the CBC group and the process used to form it.

that the Forest Service will support what the group comes up with and implies that even if opportunities are given for public comment, that only the CBC's recommendations will be truly considered by the agency. Tidwell's statements in Attachment 1 also reflect how NEPA is a pro-forma exercise. The spirit and letter of NEPA are clearly subverted by this collaborative process. Thus, NEPA has become a pro forma exercise. Since Tom Tidwell is now the Chief of the Forest Service, this is cause for alarm regarding compliance with NEPA.

Funding sources and MOUs raise not only issues over compliance with NEPA and FACA, but conflict of interest. According to FOIA information, as of the end of 2009 (see Attachment 2⁶) the CBC spent nearly \$100,000 from the Forest Service for contractor services. During that same period of time the Forest Service gave nearly \$200,000 to the CBC. Also according to FOIA information, the public affairs officer of the Clearwater National Forest was assigned to the CBC, meaning a government employee was serving a special private interest. Funding a group that creates advisory recommendations for the agency does not create the appearance of a neutral and impartial decision-making process.

A review of the financial information contained in documents obtained under the FOIA suggests that the USDA provides the money for this group. It appears cost-share from other participants is mainly done in the form of in-kind donations. While the financial information obtained through the FOIA is not explicit in every aspect, it doesn't appear that any of the other participants, aside from the Forest Service (technically not a member), have actually put their hard cash into accounts from which CBC expenses are derived.

According to the CBC website, the group states that it is specifically a "cooperative advisory-making body organized to resolve land management conflicts in the Clearwater Basin." The CBC's memorandum of understanding, also signed by the Forest Service, states, "In 2008 the CBC convened for the purpose of providing recommendations for actions concerning the use and management of the Clearwater and Nez Perce National Forests within the Clearwater Basin in Idaho." This appears to indicate that the CBC is serving in an advisory capacity to the Forest Service. The Forest Service funded this group, even before passage of the CFLRA. While the proponents of the CBC may argue it is not controlled or "utilized" by the Forest Service, the memo from the USDA to Forest Service employees (see Attachment 3) specifically notes that situations to be avoided include those where the this question is answered in the affirmative: "Does the FS manage or control the group by, for example, selecting the members, setting the agenda, or providing funding?" According to the FOIA information we received, under the Cost Sharing Agreement, the USDA is co-funding the group and Forest Supervisors are required to attend all meetings. This illustrates some level of control by the federal government due to the funding. In fact, it appears that almost all, if not all, of the actual money (as opposed to matching, in-kind contribution from other members) for the CBC

⁶ A quick review of the information from a recent FOIA request on this topic did not include any financial information.

comes from the Forest Service or the Federal Government through grants from the Secure Rural Schools Act.

At the very least, the relationship between the CBC and the Forest Service is not following the spirit of the FACA. This is not a formally organized group under FACA. The fact that what purports to be a private organization is being largely funded by the agency suggests the relationship is not what has been portrayed. This creates the appearance that the agency is utilizing a small group of special interests as the primary source of public comment in decision-making.

De facto decision-making prior to NEPA is contrary to the law. There is a great temptation for the Forest Service to engage in that kind of decision-making when politically connected special interests are running a collaborative process like the CBC.

REMEDY:

1. Prepare a supplemental EIS that meets NEPA requirements and that clearly demonstrates compliance with FACA.

VII . INADEQUATE WATERSHED ANALYSIS

Harry Jageman noted in his comments:

Road density numbers (NOAA 1998) are again cited in this section and displayed in table 3-34. Several of the watersheds are in rated as being in poor condition according to the road density calculations, but no further work is even considered for the project area. It is unclear if non-system roads have been included in the table 3-34 as previous discussion (DEIS page 3-14) suggests they have been excluded. If so, table 3-34 could display “best case” conditions and even more drainages could be rated in the poor category. Evidently, all decisions on road management and obliteration were made in a previous NEPA document (South Fork/West Fork Clear Creek Road Decommissioning EA).

The DEIS includes no summarization of past decisions and if there are additional opportunities for road closure and obliteration in the project area. If current watershed conditions could be improved such actions should be considered. Why are ECAs that exceed 15% considered for the analysis? According to the DEIS, ECAs of 15% are considered good and ECAs 15-30% are considered moderate. In all action alternatives, Upper Clear Creek is allowed to move into the moderate category under all alternatives. Lower Clear Creek moves to the moderate category under Alternative C.

It does not appear that the effects of cattle grazing have been incorporated into the watershed analysis. On page 3-44 of the DEIS it is suggested that “grazing impacts could increase over a period of up to 20 years”. How have grazing impacts been accounted for in the watershed analysis?

Al Espinosa noted:

The feasibility of the Clear Creek proposal is based upon the premise that the upward trend standard for water quality objectives (Forest Plan, Appendix A) exists. Timber management concurrent with improvement efforts can occur in below objective watersheds as long as an upward trend in habitat carrying capacity is documented (cobble embeddedness). The issue is credible documentation of improvement in sediment levels in fish habitat over time. The DEIS claims that all streams are experiencing an upward trend (Table 3-1). Based upon monitoring of cobble embeddedness (CE), all streams except the mainstem and Middle Fork, Clear Creek meet the water quality objectives.

Factual documentation of an upward trend requires a credible set of time-series data in order to deal with statistical variation (Ramsey and Schafer, 1997). Your presentation in Table 3-1 fails this requirement and is misleading. For the Solo Creek watershed, you only have two data points (1993 and 2012). This can be hardly construed as adequate time-series data. Also, if you were monitoring CE in the 1980s, where's your data to indicate upward trends in your prescription watersheds? Having monitored cobble embeddedness extensively on the Clearwater National Forest, I need to see more data before I'm convinced that you have an upward trend in any watershed. Also, it is very critical to know if the CE parameter was surveyed with the same methodology. If not, any comparison would be invalid.

The presentation of data in Table 3-1 is confusing and may suffer from a comparison of "apples versus oranges." The DEIS displays DFC tabular values (1987 vs. 2012) from Espinosa (1992). This comparison reflects improvement in habitat potential with two composite data points. Again, this is hardly an adequate set of time-series data. If you are going to use the DFC analysis, you need to tell the public what species, habitat variables, and channel types you are evaluating. There are differences especially with the sediment and temperature parameters. With the 1987 Forest Plan, the critical issue is cobble embeddedness (substrate sediment, p. 3-5 DEIS). In order to determine compliance with the Forest Plan objective, you need to compare 1987 CE levels (plus additional years) with the 2012 CE data (hopefully measured with the same technique) for a valid comparison. The DFC fisheries model was developed in the early 1990s. It is unlikely that data collected prior to the 1990s and used in the 1987 Nez Perce Forest Plan could validly be utilized in the DFC model derived from different survey methodologies on the Clearwater National Forest. In any case, there is simply not enough reliable data to document a convincing argument of upward trend and compliance with the Forest Plan objective.

The watershed analysis has not accounted for the fact that several commercial thinning units may be regenerated under Alternative C within focus areas. These stands total 854 acres and at least a portion of them should have been considered as regeneration harvest in the ECA analysis. This oversight suggests that even higher ECA values will occur as a result of the project. Even if some commercial thinning units are dropped outside of the

focus area, it will likely not make up the difference since the thinning of overstocked stands was considered to have “minor” influence on ECAs in the analysis (FEIS 3-142).

FOC and AWR noted in their comments:

The DEIS alleges that the area is on an upward trend. How was this determined? The chart on page 3-6 has no recent cobble embeddedness information for the Middle Fork of Clear Creek and every measure except for one creek, is for one year only. How can trend be determined by one data point? The same chart shows fishery habitat potential for 1987 in increments of 10 percent, which suggests that they were estimates. Was this based on actual data? How can you compare 1987 data, assuming it is real, and other data when the protocol for the measure was developed in 1992? What about PIBO data and cobble embeddedness? Isn't this comparing apples and oranges?

Furthermore, has the forest plan been amended to include later monitoring protocols? If not, why not? Page 3-5 suggests changes have been made in the protocols and in the way the plan requirements are interpreted without amending the plan? How can the agency compare across time with different monitoring protocols? How can the public trust the agency when the requirements in Appendix A are reinterpreted?

The chart on page 3-6 shows the forest plan water quality objective. How are streams meeting that objective now? That is a crucial question.

The ECA figures presented in the Draft Record of Decision (Page 28) and the FEIS (page 2-23 and page 3-135) are misleading because the existing conditions of each watershed are not reported. For example, when the existing condition is added to project associated impacts, ECA figures exceed the 15% threshold for maintaining good watershed condition (NOAA 1998) in Upper Clear Creek (ECA 18 %). Rather than acknowledging this as a concern and scaling back the proposal, the Forest Service rationalizes their actions by claiming that a large percentage of the proposed timber harvest will be commercial thinning. They forget to mention, that over 854 acres of the 4,220 acres of commercial thinning could be modified to regeneration harvest, that they have taken very little ECA deduction for commercial thinning and that the proposal includes 4,156 acres of regeneration harvest.

Further, when one looks at the project record documents, it shows high ECA figures for over half of the watersheds after implementation of Alternative C. Of the ten prescription watersheds, 6 would have ECA in excess of 15%. These include Big Cedar Creek (18%), Hoodoo Creek (29%), Solo Creek (23%), Clear Creek (19%), Brown Springs Creek (23%) and Pone Knob Creek (18%). In any case, the FEIS doesn't disclose the figures for the prescription watersheds as per direction in Appendix A of the Forest Plan.

They also suggest that because they are using PACFISH buffers, conducting logging with less ground disturbing methods and that the project area streams have high gradients there will be less impact from peak flows than NOAA predictions. However, they fail to

mention that the NOAA matrix guidelines were established in 1998 with full knowledge of PACFISH and less ground disturbance logging practices and that lower gradients can be found just downstream of the project area on State and private lands.

Ashley Lipscomb noted in her comments:

I am not convinced by the data presented in the DEIS that imperiled fish species like chinook salmon will not be negatively affected by the large amount of road building and logging in the Clear Creek drainage. Logging is also proposed to occur above a fish hatchery operated by the Nez Perce. This hatchery is already struggling due to sediment load and increased temperatures. I am opposed to this project on my national forest.

Given that most of the streams are already exceeding Forest Plan Standards (see the following page) and that an upward trend in water quality is required to proceed (see Forest Plan Appendix A), one would think the Forest Service would be more sensitive to water quality issues. Moving watershed condition from good to moderate based on ECA is not an example of an improving trend in water quality condition. Please modify the proposal to at least keep it below the 15% ECA threshold.

We further object to the analysis of impacts to watersheds, fish habitats, fish populations, and ESA-listed steelhead and bull trout as displayed in the FEIS and ROD (including the Biological Assessment). The Clear Creek Project (Alt. C) is built upon a foundation of bad science and the illusion of technique. There is little credible, consistent, and comprehensive data for fish habitats and populations that was collected in the last few years. The Agency repeatedly presents old, stale data for numerous prescription watersheds and streams as their version of current conditions:

- a. Pine Knob Creek, 1993 and 1998 data. Cobble embeddedness (CE) measured near mouth in 2012.
- b. Brown Springs Creek, no habitat or fish surveys, CE measured near mouth in 2012.
- c. Clear Creek, 1988 and 1998 data, CE measured near mouth in 2012.
- d. Solo Creek, 1993 and 1998 data, CE measured near mouth in 2012.
- e. Middle Fork, 1993 habitat and fish data. CE measured near mouth in 1993.
- f. South Fork, Clear Creek, 1984 (Nez Perce Tribe) and 1988 data. PIBO surveys in 2007 and 2010. CE measured in 1988.
- g. Kay Creek, 1988 data. CE measured in 1988. PIBO surveys in 2007 and 2010.
- h. Hoodoo Creek, 1984 (Nez Perce Tribe), 1988 fish and habitat data. CE measured near mouth in 2012.
- i. Lower Clear Creek, 1984 fish and habitat data (Nez Perce Tribe). CE measured in 1984.
- j. Big Cedar Creek, 1984 fish and habitat data (Nez Perce Tribe). CE measured by Tribe in 1984.

Despite the lack of consistent sampling and credible protocols, many of the streams still displayed elevated levels of in-stream sediment as measured by cobble embeddedness:

- a. Pine Knob Creek = 44%.
- b. Brown Springs Creek = 30%
- c. Clear Creek = 38%
- d. Solo Creek = 31%
- e. Middle Fork, Clear Creek = 55%
- f. South Fork, Clear Creek = 55%
- g. Kay Creek = 34 %
- h. Hoodoo Creek = 33%
- i. Big Cedar Creek = no data
- j. Lower Cedar Creek = 50%

The Forest Service and the Nez Perce Tribe collected samples of cobble embeddedness in 1984, 1988, and 1993. It is unlikely that the survey protocols were identical. Apparently, the problematic nature of the existing data set in 2012 motivated the Forest Service to grab some quick CE samples at the mouths of prescription watersheds (the sampling sites were not selected randomly). Unfortunately, the levels of CE were still high—30% to 55%. Regardless of the very limited data set, it appears that Clear Creek and its tributaries have not recovered from previous timber sales.

The Forest Service has not consistently utilized the best available science in the Nez Perce-Clearwater Forest in violation of NEPA and NFMA. See 40 CFR 1502.24 and 36 CFR 219.3). Fish habitat survey protocols and analyses used in the Clear Creek watershed constitute a wide range of methodologies. For example, the fish and water quality objectives seem to have only looked at one variable, based upon a 2011 internal document on how to comply with Appendix A of the Forest Plan. Much more recent, accurate models with credible analytical procedures and data are available. Fish research units with the Forest Service have developed and utilized new habitat survey and monitoring protocols associated with the PACFISH-INFISH Biological Opinion (PIBO, Kershner et al., 2004a and 2004b; Al-Chokhachy et al., 2011, and Meredith et al., 2013). In fact, Meredith et al., (2013) have applied the new protocols in the NPCF study area. PIBO habitat surveys were conducted in the mainstem of Clear Creek and several tributaries (West Fork, South Fork, and Kay Creek) in 2007 and 2010. The PIBO surveys were extensively applied to evaluate habitat differences between managed and reference sites in the Clearwater River Subbasin (Meredith et al, 2013). Habitat data was collected and trends monitored in the Clear Creek watershed. Meredith et al., (2013) discovered that managed sections of Clear Creek had lower habitat complexity than similar reference sites, and the lower habitat scores were related to substrate (sediment). Unfortunately, data collected by PIBO surveys is not directly comparable with earlier surveys conducted by the Forest Service and Nez Perce Tribe. If the NPCF had accepted new science and technology, they could have integrated their monitoring efforts with PIBO in 2004-2005 and collected enough data to support a credible analysis.

Other examples of bad science in the Clear Creek analysis were the Google Earth and NetMap modeling efforts. Trying to sell the viewing of Google satellite pictures of riparian areas (RHCAs) and other landscape features as site-specific evaluations is laughable. This is just another version of the windshield survey. The NetMap tool, a GIS spatial modeling system, was used to make specific inferences on steelhead habitat potential and sediment delivery potential of prescription watersheds. Again, this effort lacks scientific credibility. The NetMap tool and associated sub-routines were not calibrated with on-the-ground, site-specific conditions in Clear Creek and its tributaries. Also, the FEIS does not evaluate increases in sediment from log hauling as the NEZSED model does not analyze this source of sediment (see Attachment 4). No science, let alone the best science, was used in the FEIS, on this specific source of sediment. Project file document 120413MapMainHaulRdsandCulvts.pdf is a map showing all the proposed log hauling routes along with the culvert locations along those routes, which are locations where sediment from log hauling is a high risk.

It is also not clear how temporary roads are analyzed within cutting units. They should be modeled as roads are outside cutting units rather than assuming their impact would be the same as the rest of the logging unit. In studies in Horse Creek (Nez Perce National Forest) in these smaller watersheds show high peak flows, bed loading and channel down cutting are correlated with the amount of logging.

The assumptions that PACFISH buffers will prevent sediment from reaching streams are not born out by the data cited in the FEIS. None of the citations in the in the FEIS dealing with this issue evaluate sediment. Further, mass wasting events and channelized flow can breach buffers.

The finding that no municipal watersheds would be affected fails to take into account Safe Drinking Water Act regulations. Kamiah has an intake on the Clearwater and Clear Creek is within 25 miles of the intake, meeting the regulations.

REMEDY:

1. Prepare a supplemental EIS that meets Nez Perce Forest Plan and NEPA requirements.
2. Eliminate logging units, road building and road reconditioning in sub-watersheds that don't meet current forest plan objectives, standards or other requirements or where data are not conclusive.

VIII. USE OF OUTDATED FISHSED AND NEZSED MODELS

FOC and AWR noted in their comments:

The DEIS notes FISHSED and NEZSED were used to model impacts from various alternatives. However, the aquatics section does not include any quantitative information about FISHSED. There is a NEZSED section in the watershed. Why doesn't the DEIS discuss the weaknesses of FISHSED and NEZSED in terms of analysis including critiques of the model(s) such as was done by Gloss (see Gloss

1995), the critique contained in the agency's own implementation guide to Appendix A, how these models don't consider sediment produced from log hauling, and how NEZSED was found inadequate (Memorandum Decision Order, page 18, of CASE NO. CV 04-447-S-MHW, an injunction issued against the Whiskey South Integrated Resource Project)? What about other models the agency itself has developed including WEPP? What about inventory techniques developed by the agency including GRIAP to assess the impacts that roads have on watersheds (used in O'Hara Creek, for example)?

Al Espinosa noted in his comments:

The analysis of the Clear Creek proposal has not utilized the best available science. Watershed, fish, and wildlife analyses have used old, tired science. Much more recent, accurate models with credible analytical procedures and data are available. The use of NEZSED is very limited. The model is useful in delineating coarse differences between planning alternatives. It is not credible in providing accurate predictions of what is actually going to happen in watershed and fish habitat responses. The Whiskey-South litigation and Court decision (2005) have established that description. The Clear Creek analysis has used NEZSED to predict impacts to fish habitat (FISHSED). The watershed and fish habitat analyses are not valid or credible. You have used old, inaccurate models and procedures to present a best-case scenario. Despite the "cover" rhetoric, the prevailing inaccurate theme is "no impacts."

The Forest Service has developed a much better watershed model and analysis procedure—the Watershed Erosion Prediction Model (WEPP). This model is available for use and has been developed by the Forest Service research staff in Moscow, Idaho. The WEPP model includes long-term climatic data plus a stochastic climate (storm) generator. The FISHSED and DFC fish habitat models also need to be up-dated or replaced. Forest Service research efforts in Boise and Logan, Utah have provided new models and data. Without the use of the best available science, your depictions of upward trends for watersheds and fish habitats are highly questionable, speculative, and likely erroneous.

The analysis of cumulative effects was flawed and incomplete. The outdated, inaccurate NEZSED model was used for Forest Service proposed activities. However, several significant actions were not evaluated: Eastside Allotment (livestock grazing), Clear Ridge Road Decommissioning, timber harvest of Idaho state lands, and private land harvest. A credible cumulative effects analysis has to be conducted.

It is claimed the WEPP model cannot be utilized because FISHSED and NEZSED are required in the Forest Plan (FEIS-Appendix L-71). The Forest Service has spent several years in the development of WEPP sediment model and it is already being used on the Clearwater National Forest. This model is currently the state of the art science for watershed analysis and in fact much of the data behind it was actually collected on the Nez Perce National Forest in the Horse Creek watershed. This is a perfect example of

where a simple Forest Plan Amendment would be appropriate to allow the use of the best available science. Likewise, there is nothing to stop the Forest from also running the WEPP model in addition to FISHSED and NEZSED.

In keeping with the strategy of applying illusionary techniques, the NPCF has used the NEZSED model to predict sediment production and delivery to its prescription watersheds and fish habitats. The use of this model is very limited and restricted. We object to the way it was used in the Clear Creek analyses. The model is only useful in delineating coarse differences between planning alternatives. It is not scientifically credible in providing accurate predictions of what is actually going to happen in watershed and fish habitat responses. The Whiskey-South litigation and Court decision (2005) have established that description. The Clear Creek analysis has used NEZSED to predict specific impacts to critical fish habitat. The Clear Creek Project has no scientifically valid or credible analysis of impacts upon fish habitat and populations. The Forest Service has used old, inaccurate models and procedures to present a best-case scenario. As noted in the opening paragraphs on this objection point, the research branch of the agency has developed a much better watershed model and analysis procedure—the Watershed Erosion Prediction Model (WEPP, 2013). This model is available for use on-line and has been developed by the Forest Service research staff in Moscow, Idaho. The WEPP model includes long-term climatic data plus a stochastic climate (storm) generator. The model also predicts the sediment production and delivery of mass erosion events (large landslides). The NEZSED model does not feature these critical capabilities.

The NPCF contradicts its own use of the NEZSED model to evaluate sediment impacts to watersheds and fish habitats. On page 37 of the Biological Assessment, it warns readers of the following critical limitations:

- Predicted sediment yields are not representative of actual sediment loads delivered to streams.
- The model cannot predict actual in-stream conditions (e.g., particle size distribution or cobble embeddedness). Nor can the model predict actual trends in any of these factors.
- The model does not consider climatic variability.
- The model results have their primary utility in comparing differences between proposed alternatives.
- The model is not a substitute for an analysis of cumulative watershed effects.

The argument that the Forest Plan mandates the use of NEZSED regardless of its scientific credibility is self-serving and disingenuous. The best scientific information must be used under NEPA and NFMA. See 40 CFR 1502.24 and 36 CFR 219.3. The FEIS and DROD fail on this count because they use inappropriate and inaccurate models that have been replaced by better ones. When something in the Forest Plan does not work, the Agency is quick to develop an amendment and adopt it. The Clear Creek project is proposing to change the soil quality standard #2 that will allow them more space for soil degrading activities. With reference to NEZSED, the Agency won't change the management direction in the Forest Plan because the model provides the

“right” answers—minimal sediment production and delivery plus compliance with their water quality objectives.

REMEDY:

1. Prepare a supplemental EIS that meets NEPA and Forest Plan requirements.

IX. FAILURE TO SHOW AN UPWARD TREND IN WATER QUALITY AS PER THE FOREST PLAN

FOC and AWR noted in their comments:

The DEIS alleges that the area is on an upward trend. How was this determined? The chart on page 3-6 has no recent cobble embeddedness information for the Middle Fork of Clear Creek and every measure except for one creek, is for one year only. How can trend be determined by one data point? The same chart shows fishery habitat potential for 1987 in increments of 10 percent, which suggests that they were estimates. Was this based on actual data? How can you compare 1987 data, assuming it is real, and other data when the protocol for the measure was developed in 1992? What about PIBO data and cobble embeddedness? Isn't this comparing apples and oranges?

Al Espinosa noted in his comments:

The feasibility of the Clear Creek proposal is based upon the premise that the upward trend standard for water quality objectives (Forest Plan, Appendix A) exists. Timber management concurrent with improvement efforts can occur in below objective watersheds as long as an upward trend in habitat carrying capacity is documented (cobble embeddedness). The issue is credible documentation of improvement in sediment levels in fish habitat over time. The DEIS claims that all streams are experiencing an upward trend (Table 3-1). Based upon monitoring of cobble embeddedness (CE), all streams except the mainstem and Middle Fork, Clear Creek meet the water quality objectives.

Factual documentation of an upward trend requires a credible set of time-series data in order to deal with statistical variation (Ramsey and Schafer, 1997). Your presentation in Table 3-1 fails this requirement and is misleading. For the Solo Creek watershed, you only have two data points (1993 and 2012). This can be hardly construed as adequate time-series data. Also, if you were monitoring CE in the 1980s, where's your data to indicate upward trends in your prescription watersheds? Having monitored cobble embeddedness extensively on the Clearwater National Forest, I need to see more data before I'm convinced that you have an upward trend in any watershed. Also, it is very critical to know if the CE parameter was surveyed with the same methodology. If not, any comparison would be invalid.

The presentation of data in Table 3-1 is confusing and may suffer from a comparison of “apples versus oranges.” The DEIS displays DFC tabular values

(1987 vs. 2012) from Espinosa (1992). This comparison reflects improvement in habitat potential with two composite data points. Again, this is hardly an adequate set of time-series data. If you are going to use the DFC analysis, you need to tell the public what species, habitat variables, and channel types you are evaluating. There are differences especially with the sediment and temperature parameters. With the 1987 Forest Plan, the critical issue is cobble embeddedness (substrate sediment, p. 3-5 DEIS). In order to determine compliance with the Forest Plan objective, you need to compare 1987 CE levels (plus additional years) with the 2012 CE data (hopefully measured with the same technique) for a valid comparison. The DFC fisheries model was developed in the early 1990s. It is unlikely that data collected prior to the 1990s and used in the 1987 Nez Perce Forest Plan could validly be utilized in the DFC model derived from different survey methodologies on the Clearwater National Forest. In any case, there is simply not enough reliable data to document a convincing argument of upward trend and compliance with the Forest Plan objective.

Projects within the Nez Perce National Forest must be consistent with the Forest Plan. 16 U.S.C. § 1604(i). The feasibility of the Clear Creek proposal is based upon the premise that the upward trend standard for water quality objectives (Forest Plan, Appendix A) exists. Timber management concurrent with improvement efforts can occur in below objective watersheds as long as an upward trend in habitat carrying capacity is documented. Cobble embeddedness is the critical parameter as it relates to the water quality objectives of the Forest Plan. Percent fines by depth is not the critical Forest Plan parameter. The percent fines parameter was added to the DFC analysis developed by Espinosa (1992) post Forest Plan. The issue is credible documentation of improvement in sediment levels in fish habitat over time. The FEIS claims that all streams except Pine Knob, Middle Fork of Clear Creek and the mainstem of Clear Creek are meeting their water quality objectives, and by inference experiencing an upward trend (Table 3-3, p. 3-10). This claim of compliance with the Forest Plan objectives is based upon samples of cobble embeddedness obtained at the mouths of these streams. Obviously, these sample sites were not selected randomly. The comparison of these CE measurements with those obtained in previous sampling periods is not credible as the methodologies and sites of cobble embeddedness monitoring significantly differ from those used in 2012. Also, the comparison of PIBO % fines data with CE data (historical) is not valid as sampling sites, parameters, and methodologies significantly differ. The PIBO % fines parameter is a surface estimate and differs significantly from the % fines by depth that requires coring of the substrate. The two parameters cannot be validly compared. There is no valid claim of **upward trend** compliance with only one year (2012) of cobble embeddedness data.

Factual documentation of an upward trend requires a credible set of time-series data in order to deal with statistical variation (Ramsey and Schafer, 1997). The Forest Service's presentation in Table 3-3 fails this requirement. The comparisons of CE data collected in 1980s with those collected in 2012 are not credible because they are not sampling the same set of locations and may not be using the same protocol. Methodologies, sampling sites, sampling protocols, and statistical validity are not comparable. The FEIS and BA

are comparing “apples versus oranges.” Also, the PIBO data presented for Kay and South Fork, Clear Creek are not comparable to the CE or % fines by depth data. (NOTE: Regardless, the PIBO data suggest that there is no upward trend). The PIBO parameter is a surface sediment measurement. Therefore, the data presented in Table 3.3 does not validly document that the Clear Creek watersheds are meeting their Forest Plan objectives, including those in Appendix A.

Thus, the rationale presented by the Forest Service (FEIS, p. 3-14 and 3-15) for the determination of upward trend is baseless. Since the advent of their Forest Plan in 1987, the Nez Perce Forest NEPA documents have always had trouble with the upward trend requirement. The Forest Service has yet to provide one credible example of upward trend in fish habitat conditions in a degraded watershed. An upward trend that has been monitored consistently, displays a statistically robust database, and documents a watershed with fish habitat conditions well on their way to recovery without interruptions. There has been plenty of time to produce one—1987 to 2015 (28 years).

REMEDY:

1. Prepare a supplemental EIS that meets NEPA and Forest Plan requirements.

X. FAILSAFE MECHANISMS TO PROTECT WATER QUALITY, AND FISH HABITAT (INCLUDING SPECIES LISTED UNDER THE ESA) ARE NOT BASED UPON THE BEST AVAILABLE SCIENCE

Al Espinosa noted in his comment:

The “fail safe” contention extends to best management practices (bmps), decommissioning roads, and building temporary roads. Espinosa et al. (1997) documented the failure of bmps to adequately protect salmon habitat on the Clearwater National Forest. Decommissioning and building temporary roads will still generate and deliver sediment to streams in the short term—a relative period of 15 to 20 years (pp. 3-41-3-42). When you add sediment generated from skidding, yarding, and transporting of logs, the situation can hardly be described as “fail-safe” or no impacts. The DEIS has been over-zealous in describing their “perfection” scenario. If recovery is occurring (not documented), it will certainly be interrupted, delayed, or eliminated. The “check” will still be in the mail.

The FEIS and BA depict a scenario of perfection in the face of a large timber program implemented in an abused watershed. This is convenient and unrealistic. While it is commendable that the Forest Service is decommissioning non-system roads, replacing bad culverts and requiring “no harvest” PACFISH buffers, it remains that the Agency is implementing a failed management strategy. The script is: do some rehabilitation and then implement a large timber sale. This is a press disturbance and will not recover degraded watersheds and fish habitats. It has been done countless times. We object to this description as restoration.

The Clear Creek project generate impacts with extensive timber harvesting, temporary road construction, reconstruction of existing roads, road decommissioning, culvert replacement, yarding, and skidding. The contention that no measurable sediment will be delivered to prescription watersheds and fish habitats is largely based on PACFISH buffers (RHCAs), temporary roads, best management practices (BMPs), and the hope that no large storms will occur. PACFISH buffers are certainly not “fail-safe.” The Forest Service only has to consult their documentation of the 1995-96 storm event in the Clearwater Basin that resulted in hundreds, if not thousands, of road failures, stream blowouts, and landslides in developed watersheds to refute the “fail safe” contention (McClellan et al., 1997). During this storm, PACFISH buffers (100-300 ft.) did not effectively stop significant sediment delivery from road failures and other mass erosion events. Large amounts of sediment were delivered to the streams. In Clear Creek, streamside roads have already compromised a considerable number of RHCAs (FEIS, p. 3.3). With the advent of climate change, we can expect more frequent and severe storms. Temporary roads are frequently not temporary. More temporary roads will be built in Clear Creek as the press disturbance mandates. Sediment and impacts delivered to degraded streams from temporary roads are not necessarily temporary or short term. Spawning and rearing habitats already degraded from past development are more vulnerable to long-term impacts from additional sediment loading. In addition, currently depressed populations of steelhead trout could suffer further long-term impacts from lower quality habitats.

The “fail safe” contention extends to best management practices (BMPs). Espinosa et al. (1997) documented the failure of BMPs to adequately protect salmon habitat on the Clearwater National Forest. Failure occurs because recovery is not the primary objective of the BMP concept.

Further, the FEIS fails to look at cumulative impacts from road reconditioning. Many roads are grown over and not contributing sediment now. They will be rebuilt and contribute sediment under the proposed action.

The FEIS fails to consider and use its own best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24. The failsafe mechanisms do not rely upon the best available science. Additionally, the FEIS fails to analyze the cumulative impacts from road reconditioning, in violation of NEPA and NFMA. 36 C.F.R. 220.4(f).

REMEDY:

1. Prepare a supplemental EIS that utilizes the best available science for failsafe mechanisms and analyzes the cumulative impacts from road reconditions, per NEPA and Forest Plan requirements.

XI. THE BIOLOGICAL ASSESSMENT (ANY CONCURRENCE OR BIOLOGICAL OPINION) FOR LISTED ANADROMOUS FISH IS FLAWED BECAUSE IT IS BASED UPON FAULTY DATA

FOC and AWR noted in their comments:

How can cumulative impacts be adequately considered when the analysis of logging analyzed is limited to the national forests only (page 3-137)? What about the fact that non system roads were not analyzed in terms of road density calculations?

What about the lack of analysis of impacts from national forest logging on Big Cedar Creek in terms of sediment even though logging is proposed there? What about the analysis for sediment at the mouth of Clear Creek only being from the national forest? How is this a cumulative impacts analysis? This is a particularly important issue as there are downstream interests, including private residences and a fish hatchery, which could be affected by impacts to water quality in Clear Creek (including sediment and temperature) from this timber sale and other cumulative actions.

What about impacts from grazing on watershed and fisheries? What about the demonstrated failure of BMPs as documented in the Fishbake court case on the Clearwater National Forest and in published research (see Espinosa, F. Al, Jr., J. J. Rhodes, and D. A. McCullough. 1997. The Failure of Existing Plans to Protect Salmon Habitat in the Clearwater National Forest. Journal of Environmental Management (1997): 49, 205-230.)?

What are the impacts to listed fish species in light of these unanswered questions? Specifically critical steelhead habitat occurs in the analysis area.

The Biological Assessment of the effects (Alt. C) upon steelhead trout, their designated critical habitat, and essential fish habitat determined a may affect, likely to adversely affect situation. Formal consultation with NOAA Fisheries concurred with that assessment. NOAA will issue a biological opinion on the assessment and provide terms and conditions that will be included in the final ROD for the project. Considering that the analyses in the FEIS, BA, and ROD were fatally flawed and not scientifically credible (see for example Objection Points VII to X), what did NOAA concur with? The Forest Service is required to provide the best scientific and commercial data available. 50 C.F.R. § 402.14(d). Yet the Forest Service has provided severely flawed scientific data instead. If NOAA issues a BO that permits the implementation of Alternative C, essentially unchanged and without adequate protections for the ESA-listed steelhead, the BO will be fatally flawed. The determination should have been will affect and will adversely affect the species.

REMEDY:

1. Prepare a supplemental EIS that meets NEPA, ESA and Forest Plan requirements.
2. Give the new data to NOAA and USFWS so consultation can begin again.

XII- BULL TROUT AND THEIR HABITAT ARE NOT PROPERLY EVALAUTED

Al Espinosa noted:

The DEIS states that no bull trout were observed in 1993 and 2007. Why haven't more surveys been conducted since 2007? The public needs more information. How comprehensive were the surveys? What kinds of equipment and protocols were utilized? If potential improvement of bull trout habitat is occurring, we need to see the documentation. If the Clear Creek proposal is about restoration, we need to see the prospects and objectives to restore bull trout to the system. We also need similar information and data on the spring Chinook salmon. With a hatchery near the mouth of Clear Creek, it seems that there would be more of an effort to restore spring Chinook to the system.

FOC and AWR noted, "Bull trout are not known in the area. However, have there been any recent surveys to verify their absence after 2007? How much of the area was actually inventoried?"

We object to the dismissal of the presence of bull trout in the Clear Creek watersheds and the determination of may affect, but is not likely to adversely affect the species. The FEIS states that bull trout were only sporadically found in the lower drainage (p.3-28), and that high temperature regimes during the spawning migration prevent them from accessing tributary streams. If the bull trout show up in the spring and early summer, they may access these streams. Lower elevation streams in the Clearwater Basin have bull trout in their upper headwater reaches by July and August. Their spawning migration period extends from early spring to early summer. These bull trout avoid the thermal barriers of mid-to-late summer. We are not convinced that population surveys for bull trout were comprehensive or intensive enough to dismiss them. How many headwater reaches of Clear Creek tributaries were surveyed? Cooler thermal regimes would be expected in these higher elevation reaches and could support bull trout. What kinds of equipment and protocols were utilized? Were any surveys conducted in 2012?

Further, resident populations could stay year long in headwater streams. If the Clear Creek proposal is about restoration, the agency needs to show what definitive measures and objectives are going to be accomplished for bull trout.

Without surveys of headwater streams, it is impossible to determine whether resident bull trout are in the area. Indeed, the BA notes on page 77, "Juvenile bull trout have not been documented" but then goes on to admit, "although surveys specifically designed to detect bull trout have not been done.". Further, the FEIS admits that bull trout are found in the lower drainage. Thus, the not likely to adversely affect determination is not based upon adequate information and that violates not just NEPA (see 40 CFR 1502.24), but the ESA and NFMA as well. See 50 C.F.R. § 402.14(d) and 36 C.F.R. 219.3.

REMEDY:

1. Prepare a supplemental EIS that meets NEPA, ESA and Forest Plan requirements.

XIII – WE OBJECT TO THE PURPOSE AND NEED FOR VEGETATION MANAGEMENT (FEIS 1-5), BECAUSE IT HAS LARGELY BEEN BASED ON DRY FOREST TYPES FOUND IN A SMALL PORTION OF THE PROJECT AREA (VRU 3) INSTEAD OF THE MOIST FOREST TYPES FOUND IN MOST OF THE PROJECT AREA.

FOC and AWR noted:

In our scoping comments we provided significant information about the interface between fire and vegetation in this area. The Forest Service seems to consistently deny that cedar and grand fir types are predominant through much of this area. The conversion away from cedar to other species is misguided. Cedar is a very resilient species, supposedly the criterion for this project. Is such a massive type conversion legal under NFMA?

Harry Jageman noted:

A contention is made on page 3-26 that the project will reduce fire risk by 7%. This contention is made because of the amount acreage that will be susceptible to crown fire will drop from 51% to 44% by 2022 due to regeneration harvest. The fire risk figure is then transferred to many other areas of the analysis including the effects analysis for water quality and wildlife habitat.

While I agree that the amount of regeneration harvest may affect fire behavior should a wildfire occur, I do not think that fire risk will actually be reduced. Fire risk is largely a function of weather patterns, drought conditions, fuel moisture and ignition sources. The risk of fire may actually even increase as logging operations and burning operations are conducted across the landscape. Harvest operations such as commercial and pre-commercial thinning may increase risk due to drying and more uniform redistribution of fuels. The Forest Service needs to incorporate more than just the amount of regeneration harvest into its fire risk assessment in the final FEIS. ...

The DEIS suggests that all upland areas are currently meeting or very near the “Desired Conditions” for the amount of young forest, but the Forest Service still thinks more is needed. In VRU 7 it is stated on page 3-55 that the “young forest stage is in excess of the desired condition by 150 acres”. The Forest Service response is to basically double the amount of harvest over the desired amount of 250-500 acres (Table 3-24 – Page 3-74). Various action alternatives harvest an addition 253 to 427 acres over the existing amount of 590 acres (Table 3-24 – 2017 values).

In VRU 10 the Forest Service states that there “is the need for a slight increase in the young forest”. The current condition is reported at “9%” and the desired condition is reported at “10-20%” in Table 3-13 (Page 3-56). For some reason, the Forest Service does not report the amount of young forest that will be harvested in VRU 10. These figures should be displayed in the FEIS.

In VRU 17 the Forest Service states on page 3-57 that “No departures from desired conditions occur”. Under the action alternatives harvest of an additional 1233 to 2349 acres is proposed over the existing situation of 2744 acres (Table 3-24 – 2017 values). Are such extensive actions really needed in an area where there are “no departures from desired conditions”?

The figures all suggest that the upland areas are at or near “Desired Conditions”, and significantly refute the Forest Service’s claim that immediate action is needed in these types. A more moderate proposal (particularly in mesic uplands) could still meet the project purpose and need and better protect other resource values. ...

The driving force behind the development of FEIS Alternative C appears to be the idea that uncharacteristic levels of grand fir and Douglas fir now exist in the project area due to fire suppression (FEIS 1-5). This idea has resulted in the largest timber sale proposal in the Nez Perce / Clearwater National Forest in recent years. The concept of grand fir and Douglas fir encroachment was initially championed by researchers working in dry ponderosa pine forest types, where forest fire suppression had reduced the amount of understory fire and had allowed understory encroachment of small diameter ponderosa pine and Douglas fir seedlings. Only a small portion of the project area (VRU 3 – 3030 acres) occurs on dry south facing breaklands where understory fire may have played this role. Generally, the project area is composed of moister types (cedar habitat types) where understory fires are less common and stand replacement fire is the norm.

The interpretation that stands are now denser and composed of more tolerant species appears to be driving Alternative C and this concept is well documented throughout the FEIS and Draft Record of Decision. There appears to be a conception that dense stands are not normal and that these stands must have intervention to develop normally and prevent fires. We believe this interpretation is ecologically unsound and fostering management objectives that lead to large-scale actions like Clear Creek Alternative C. In the moist forest types of the project area, we believe that grand fir and Douglas fir are normal stand components and that high stocking rates are quite normal (Haig 1932). We do not see the need to develop large scale actions like Alternative C that threaten water quality, aquatic species and wildlife when more moderate proposals could have been considered.

We believe the moist forest types of the Nez Perce Clearwater National Forest and the project area are generally competition-based systems that develop after large-scale stand replacing fire. Stand density is usually not the driving factor in the initiation of these large-scale fires that generally occur at intervals of 250-300 years and under drought conditions such as those that occurred in 1910 and 1933. Intolerant species like western white pine and western larch have an initial advantage in these systems due to fast growth rates that allow them to capture the site and outpace the growth of other more tolerant species like grand fir, Douglas fir and western red cedar. Ponderosa pine, while present, is generally out competed in all but the driest locations in this system.

White pine and larch can dominate the site for long periods of time, but they are gradually replaced by more tolerant grand fir and western red cedar on more northerly aspects. On southerly aspects Douglas fir has an advantage due to its greater tolerance of drought and intermediate shade tolerance. White pine is not favored on southerly aspects due to moisture requirements, but western larch does well. The introduction of white pine blister rust changed this dynamic and gave a greater advantage to grand fir and cedar especially on northerly aspects.

Unlike, the dry ponderosa pine system most of the competing trees would have been present at the time of stand establishment and stands would have changed overtime due to competition, blowdown, and insect and disease attacks. Understory fire would have also had some influence, but it is not a major driver like it is in the ponderosa pine system. Except for extensive historical harvest operations and the introduction of blister rust, this system pretty much operates as it did historically. Overtime, white pine may make a comeback as foresters develop and plant rust resistant stock and the tree develops resistant mechanisms on its own. However, a strategy that relies heavily on white pine (As proposed in Alternative C) is probably unrealistic given current situation with blister rust.

The fact that these systems always had high densities of trees is well documented by Haig (1932) in his description of the white pine type years ago and long before the effects of fire suppression was considered a major issue. He reported “The extremely rapid decrease in number of trees with increasing age is strikingly apparent. On good sites (site index 60) the total number of trees per acre drops from 4,700 at 20 years to 720 at 80 years, and to 390 at 120 years. The number of trees also decreases rapidly with increase in site index.” On excellent sites (Site index 70) Haig found an average of 2,800 trees per acre over a diameter of 0.6 inches in diameter at 20 years of age, on fair sites (site index 50) Haig’s tables show approximately 7,800 trees per acre over a diameter of 0.6 inches DBH at age 20 and on poor sites (Site Index 40) he found an 11,500 trees per acre at age 20.

Clearly, the idea of understory encroachment is not an applicable in the moist cedar types that predominate on upland VRUs of the project area. Tree species found here like cedar, grand fir and white pine have made very little genetic investment in mechanisms to survive fire. Instead they rely on fast growth or extensive canopies that allow for light capture in densely stocked stands. Dense stocking rates are also the norm on north facing breaklands where relatively moist habitat cedar habitat types still predominate.

We acknowledge that some of the thinking described in the FEIS in regard to fire suppression and encroachment of Douglas fir and grand fir may be applicable to a small portion of the project area on south facing breaklands (VRU 3). These drier sites do support a higher component of ponderosa pine and understory fire may have been more common here historically although even that is questionable as stand-replacing fires play a role in those systems. Nonetheless, conclusions such as drier forests did not experience stand-replacing fires, that fire regimes were frequent and nonlethal, that these stands were open and dominated by large well-spaced trees, and that fuel amounts determine fire

severity (the false thinning hypothesis that fails to recognize climate as the overwhelming main driver of fire intensity) are not supported by science (see for example Baker and Williams 2015, Williams and Baker 2014, Baker et al. 2007, Pierce et al. 2004, Baker and Ehle 2001, Sherriff et al. 2014 and Kaufmann et al. undated). Even research that has uncritically accepts the questionable ponderosa pine model that may only apply to the Mogollon Rim of AZ and NM (and perhaps in similar dry-forest types in California), notes the inappropriateness of applying that model to elsewhere (see Schoennagel et al. 2004).

While proposed action management prescriptions might be most applicable to these areas (again, the latest science even questions that assumption), these concepts appear to have been extended to moister upland areas and north facing breaklands in the development of Alternative C. Changes in the moist types are largely due to the introduction of white pine blister rust and not fire suppression. We therefore object to the overall purpose and need for vegetation management in the project area and the development of Alternative C in response to the unsound ecological thinking behind that described in the purpose and need. It is not using the best available science and applies a vegetation model not suited to most of the project area. It fails NEPA's requirements for accurate scientific analysis (see 40 CFR 152.24).

REMEDY:

1. Prepare a supplemental EIS that meets NEPA by using the best available science, including revision of the purpose and need.
2. Confine the project areas roads and vegetation treatments to areas mapped as VRU 3.

XIV. OTHER VEGETATION ASSUMPTIONS NOT BASED UPON EITHER BEST AVAILABLE SCIENCE OR LOGICAL INFERENCES

It is claimed in the FEIS that stands with western red cedar cover types have not been targeted with proposed timber harvest in Alternative C (Appendix L53-54). It is also claimed that while most stands in VRU 10 and VRU 17 are on western red cedar habitat types; most stands scheduled for harvest are composed of grand fir cover types (Appendix L53-L54). Again the plan within these regeneration harvest units is to favor white pine, western larch and ponderosa pine by planting intolerant species after harvest. The reasons given in the FEIS (3-98) suggest that intolerant species will have greater resistance (ability to prevent impacts and protect valued resources), resilience (capacity of ecosystem to return to desired conditions after disturbance) and response (ability to transition from current to desired conditions after disturbance) than the existing grand fir/cedar stands they replace.

We object to this logic and do not agree that the new stands will be more resistant, resilient and be able to respond after disturbance. Overtstory and understory components of cedar are likely present even if the stands are currently in grand fir cover types. Advanced regeneration of cedar is also highly likely since the stands all occur on cedar

habitat types. As grand fir dies it is likely to be gradually replaced by cedar, which would be the natural progression in these habitat types. Western red cedar is one of the longest-lived and most resilient species found on the Nez Perce/Clearwater National Forests. The species has fewer problems with insects and disease than almost any tree species found on the Forest. Thus the stands are likely to become more stable over time as cedar gradually replaces grand fir. Regeneration harvest will only serve to “short stop” this natural ecological process.

That stands composed of ponderosa pine, white pine and larch would be more resilient in this setting seems to have very little scientific rigor and it is much more likely that the existing stands of grand fir and cedar will be more resilient. First, white pine is subject to an introduced pathogen that has resulted in catastrophic losses across the species range and we don’t know how that pathogen might respond to future events. Mutations of blister rust are much more likely in a stressed environment than the tree’s ability to respond to that change. Second, ponderosa pine is likely to be outcompeted in these moist habitat types and more shade tolerate species like grand fir have already done this in most moist habitats on the Forest. If individual grand fir trees do die, they will likely be quickly replaced by new grand fir or cedar trees. If individual ponderosa pine, white pine and western larch trees die, tolerant grand fir and cedar will likely replace them. Thus we disagree with the FEIS conclusions that existing grand fir/cedar stands are highly unstable and ready to self-destruct even if the existing cover type is grand fir. These stands are likely transitioning to more stable cedar communities, and we suspect they will remain fairly stable for long time frames in these moist habitat types. Such stands can provide important wildlife habitat for species like moose, fisher, pileated woodpecker, black-backed woodpecker and other species associated with snags, downed wood and older forests. Grand fir and Douglas fir (on southerly aspects) are the most common cover types on the Nez Perce / Clearwater National Forest for a reason. Thus we object to the conclusion that fire suppression has caused an unnatural expansion of grand fir and Douglas-fir across the project area and that these stands need to be regenerated for an ecological reasons (see Baker et al. 2007). From our perspective, the real reasons appear to be tied to economic incentives for more timber harvest and the desire for more valuable timber species for future logging.

Other incorrect assumptions in the FEIS lead to the failure to use the best available science. The allegation in the FEIS that thinning or logging prevents fires is of considerable scientific doubt (see Rhodes and Baker 2008), including the agency’s own science on how removing shade affects local sites and makes them drier. The allegation that thinning replicates natural fire or that it has few consequences is also contradicted by science (for example see Rhodes and Baker 2008, McIver et al 2012, and Rhodes 2007).

Issues associated with the wildland urban interface or WUI are equally problematic. The idea that treatments well beyond structures can affect them is not supported by science, yet is one of the primary reasons for this project (FEIS page 1-1). Indeed, it is the first CFLRP proposal goal listed.

Harry Jageman's comments noted:

The Forest Service needs to re-evaluate the fact that 94% of the area is considered WUI (page 3-21) by Idaho County Wildfire Mitigation Plan Committee (Idaho County 2009). This designation appears to be in error as most of the upper drainage is 100% National Forest and located several miles from any urban areas or other areas of human habitation. Such a designation can potentially cost the government thousands of dollars for unnecessary fuel treatments. Even more problematic is the fact that limited funding is being diverted away from real urban interface areas where human life and real property is actually threatened.

FOC and AWR noted, "We also question the legitimacy of this being in a WUI. It isn't under any meaningful definition. Further, when did the Idaho County plan that identifies the WUI on the national forest go through NEPA?" Furthermore, FOC and AWR raised this issue in scoping comments:

Another factor that needs to be considered when looking at this issue is that Jack Cohen's research clearly shows that for town or structure protection, anything beyond about 40 meters is ineffective. In other words, the WUI is in reality, about 40-meters wide.

Forest Service research shows that for structure protection, anything beyond about 40 meters is a waste of time. (See Cohen 1999). As such, the FEIS is not based upon the best available science regarding the WUI. See 40 CFR 1502.24.

Remedy:

1. Prepare a supplemental EIS that meets NEPA by using the best available science.

XV. HARVEST OF STANDS NOT MEETING CULMINATION OF MEAN ANNUAL INCREMENT

Harry Jageman noted in his comments:

The justification for regeneration harvesting of immature stands under Alternative C (Section 2.2.4) and any other proposed alternative is very weak. The Forest Service does not need to regenerate these stands until they reach culmination of mean annual increment given the large number of stands proposed for treatment that have already reached culmination. All proposed alternatives treat large acreages of stands which have presumably culminated and this level of harvest should more than exceed the purpose and need described for the project. Thus there is no ecological, resource or management need other than the desire to harvest more timber to cut stands that have not culminated. There is no justification for harvesting such stands given the existing situation.

FOC and AWR asked in their comments:

The DEIS is not clear on whether the project will meet requirements that trees be logged only after meeting culmination of mean annual increment (CMAI). Given

the acreage that meets CMAI in the project area, how does the project comply with NFMA by proposing to log areas that don't meet CMAI?

We do not agree that harvest of stands not meeting culmination of mean annual increment is necessary. Rationalizations that these stands need to be harvested to “increase patch size and reduce fragmentation; increase the amount of early successional stands and wildlife foraging habitats; improve forest structure; and increase the distribution of early seral species” do not justify harvest of these stands at this early age.

First, the actions will only create larger patch size of early successional forest and not increase patch sizes of “older forest” which is really the critical concern. Patch size of younger forest will already be increased by Alternative C with harvest of stands that have already reached culmination. Second, even without the stands that currently do not meet culmination of mean annual increment the project proposes large amounts of timber harvest and the amount of early successional stands will be more than sufficient to meet wildlife needs. Third, the stands can always be harvested at a later date when they have culminated. This would actually allow opportunities for continued wildlife forage supplementation when the stands that will be cut on Alternative C close in due to forest succession. Fourth, forest structure will be simplified by returning stands to early age classes. All forest growth towards older age classes will be lost and newly harvested stands will have to start their progression to older age classes anew.

The FEIS does not show that the selected alternative in the draft ROD is consistent with NFMA. In fact, logging before CMAI is contrary to the statute (see NFMA Section 6(l)).

REMEDY:

1. Prepare a supplemental EIS that meets NEPA and NFMA
2. Drop all logging in stands in that don't meet CMAI.

XVI—WEEDS ARE INCORRECTLY ANALYZED

Alan Schonefeld noted in his comments:

There is a large infestation of yellow star thistle in T31N R6E Sec 3 SE ¼, which is not near a road. The initial infestation was reported to the forest service about 11 years ago but it was never addressed. This is part of the area where prescribed fire treatment is planned. Fields studies have shown that fires are usually not severe enough to kill yellow star thistle seed and that fire stimulates germination of yellow star thistle seed in the soil seed bank, reduces competition in the plant community, reduces the thatch layer, and exposes mineral soil. Yellow star thistle plants that germinate following fire may grow larger and have more flowerheads the following year. It has been suggested that heat from prescribed fire may stimulate germination of yellow star thistle seed in the soil. While fire can be an effective treatment of yellow star thistle it has to occur at the correct time in the life cycle and must be followed up with intensive management practices. Without these parameters yellow star thistle infestations will become worse, and the infestation could spread to other

tracts scheduled for burning since the newly burned areas will be more susceptible to infestation. Given the mentioned lack of concern or treatment of the initial infestation in the area I am inclined to believe little or no follow up treatment will occur after the area is burned, let alone any “aggressive” treatment.

The FEIS did not address this specific issue on weeds and what the agency intended to do to prevent this infestation. Indeed, the agency didn’t even address this site-specific comment, which provided crucial resource information. One of the reasons that NEPA requires public involvement is for this very reason—as an avenue by the knowledgeable public (in this case, a citizen with site-specific knowledge) to provide the agency new and key information.

REMEDY:

1. Prepare a supplemental EIS that meets NEPA.
2. Drop the infested area from treatment.

XVII – FAILURE TO ACCOUNT FOR NON-SYSTEM ROADS AND TAKE A HARD LOOK AT ACCESS MANAGEMENT

Harry Jageman noted in his comments:

In section 3.1.6.2.1 it is documented that non-system roads were not included in the road density calculations, but in numerous locations of the DEIS road density is used to document watershed condition (NOAA 1998) and impacts to wildlife. For example, in the following Section 3.1.6.2.2 it is suggested that the RHCA road density for the entire Clear Creek watershed would move from 2.2 mi/mi² (poor condition) to 2.0 mi/mi² (moderate condition). What would road density be if non-system roads were included?

FOC and AWR noted in their comments, “What about the fact that non system roads were not analyzed in terms of road density calculations?”

The FEIS admits that existing non-system roads were not included in any analysis used in the FEIS (Appendix L-49). It also admits that road closures and access were not addressed in the FEIS (Appendix L-50). This causes serious concerns with any analysis that uses road density as a surrogate for fish and wildlife habitat loss or water quality condition. The analysis also admits that non-system roads proposed for decommissioning “have been impassable to motorized vehicles, due to brush, for a long time.” It does not discuss how many miles of the 119.8 miles of system roads proposed for road reconstruction of system road are also in this condition.

With no attention being given to access management, the fact that several roads proposed for reconstruction may be currently impassable really calls into question FEIS assertions that access will not be changing. Impassable non-system roads also call into question what sediment reduction and fish and wildlife habitat improvement value decommissioning of these roads will really have. While we believe it is important to

remove high-risk culverts from non-system roads to prevent future landslide risk, it does not sound like most of the roads proposed for decommissioning are chronic sediment sources. Opening existing system roads that are in this same condition (impassable and grown over with brush) could turn them into chronic sediment sources and decrease security for a variety of wildlife species.

Thus we object to all road density analyses that have not included non-obiterated non-system roads. We also object to conclusions that the project will not impact fish and wildlife species that are sensitive to open road density like elk, fisher, marten, wolverine and lynx. Existing open road and trail access has not been examined in the FEIS and several “impassable” system roads could now become open to motorized use as a result of road reconstruction activities. The Forest Service has an obligation to correct past problem areas as a part of their cumulative effects analysis for all fish and wildlife species and water quality. Thus accepting the existing condition as the status quo is not appropriate. The fact that there will not be any new permanent road construction and that all new temporary roads will be closed after logging does not excuse the Forest Service from their obligation to examine existing conditions and changes in access that their actions will cause. The Forest Service’s refusal to look at elk security habitat (ROD 31) is a good example of how the Forest Service has ignored past access problems with this project. Elk security is a forest plan requirement.

The FEIS fails to provide a cumulative impacts analysis for non-system road in violation of NFMA and NEPA. The cumulative effects of past actions that cause present effects, along with the indirect and direct effects of the proposed action, must be analyzed for the environmental impact likely to occur. 36 C.F.R. 220.4(f). Additionally, the proposed restoration project is inconsistent with the Forest Plan in violation of NFMA, since it fails to account for elk security. 16 U.S.C. § 1604(i).

REMEDY:

1. Prepare a supplemental EIS that meets NEPA and the Forest Plan.

XVIII-THE ROD AND FEIS FAIL TO MEET NEPA AND NFMA REGARDING DESIRED FUTURE CONDITIONS AND DOCUMENTS THAT HAVE NOT GONE THROUGH NEPA ANALYSIS

One of the major problems is the use of (and abuse of) non-NEPA and non-decision documents as programmatic decision documents, like a forest plan. The FEIS contains programmatic decisions establishing new management direction for the Forest by developing new desired conditions. As such, they MUST go through forest plan amendment or revision.

For example, the Forest Plan does not give direction to have fewer stands of grand fir or Douglas fir and shift toward more early seral species. The plan does not direct an increase in ponderosa pine, western larch and western white pine (FEIS page 1-5).

The two main statutes that govern the management of our National Forests are the National Environmental Policy Act (NEPA) and the National Forest Management Act (NFMA). These two intertwined environmental laws form the procedural path the Forest Service must follow when making management decisions that affect National Forest land. One of the most important steps in this path is the requirement of public participation in the management decisions. Public participation in Forest Service management decisions is extremely important because it helps to ensure agency compliance with the applicable environmental laws that control or affect land and resource use and provides for administrative appeal and judicial review of these decisions.

Specifically, the Middle Fork Clearwater River Subbasin Assessment and the 2011 assessment and analysis FEIS (page 1-5) have not gone through the NEPA analysis and decision process to look at a range of alternatives or to consider cumulative impacts nor has it been adopted into the forest plan. This is crucial because no alternatives to the non-forest plan DFCs have been considered. The cumulative effects of that change in direction has not been analyzed either.

Indeed, the Forest Service did not even analyze an alternative using the DFCs in the Forest Plan! This is incredible. The FEIS notes on page 2-15:

Some commenters did not want the DFCs that were developed specifically for this Project to be used and asked that the IDT use Forest Plan goals and objectives alone to guide management activities.

The IDT considered this alternative, but did not analyze it in detail ...

If the agency wishes to use another set of DFCs other than those in the forest plan, it needs to comply with NEPA and NFMA by doing a forest plan amendment. Simply put, pre-NEPA decisions referred to in the FEIS are not allowed either under NEPA or NFMA, regardless of the reason.

Friends of the Clearwater provided extensive comments on the Proposed Action for the revised forest plan for the Nez Perce-Clearwater National Forest. The comments addressed the subject of desired conditions in three sections entitled Desired Conditions, Desired Future Dynamics, and Climate Change, and cited about 22 scientific references. Objectors now incorporate by reference those three sections of the FOC comments within this section of the Objection, and include the entire document as Attachment 9.

The Draft ROD even resorts to fabrication regarding what the Forest Plan says about “desired conditions.” The Draft ROD states:

Desired Condition: The desired condition is to “utilize timber outputs produced through restoration activities to support the economic structure of local communities and provide for regional and national needs” (Forest Plan page II-1).

Actually, that clause doesn’t appear in the Forest Plan, at II-1 or anywhere else. We could not find the word “restoration” anywhere in the Forest Plan. The word “restore” appears twice—in the context of restoring degraded fish habitat.

Forest Service land-management decision-making is a two-stage process. Briefly, there is the planning stage and the site-specific project stage. The planning stage is the production of Land and Resource Management Plans (LRMP's or Forest Plans), which create a framework for subsequent forest management. Forest Plans are regarded as programmatic documents that establish the management direction of the forest. The second stage is the development of site-specific projects, which determine the specific uses to which the forest will be put to accomplish the goals set forth in the Forest Plan. Site-specific projects are required to comply with the management prescriptions established in the Forest Plan.

Additional documents, which set management direction, under the deceptive auspices of analysis, are not allowed under NEPA and NFMA. Such tiering to a non-NEPA document is not consistent with NEPA, NFMA or the Nez Perce National Forest Plan. 40 C.F.R. § 1502.20. It doesn't matter whether those "decisions" were made elsewhere. They must be adopted by the forest plan to be legitimate as desired future conditions.

This is true of the Idaho County fire plan as well. The FEIS refers to and tiers to this plan, yet it never went through NEPA. FOC and AWR asked, "Further, when did the Idaho County plan that identifies the WUI on the national forest go through NEPA?" Simply put, the project does not comply with NEPA or NFMA because decisions and amendments have been adopted without going through either the amendment process under NFMA or the NEPA, public evaluation process.

REMEMDY

1. Prepare a supplemental EIS that meets NEPA, NFMA and the Forest Plan.

XIX. ROADLESS AREAS ARE IMPROPERLY IDENTIFIED AND EVALAUTED

Alan Schonefeld noted in his comments:

BIRD HABITAT

Much of the Clear Creek Roadless area slated for fire treatment is currently prime bird habitat. While a few species of concern are identified in the plan, the area is teeming with bird species, most of which nest in the proposed burning areas. As an avid birder I use the roadless area frequently to observe birds (a partial list is included). Burning out the underbrush will destroy much of this habitat.

The importance of the Clear Creek Roadless Area as bird habitat becomes much more consequential when the cumulative effects of landscape treatment by surrounding landowners is taken into consideration. Private landowners in the surrounding area have been strongly encouraged to aggressively treat ALL of their property for "fire mitigation" which includes clearing all the brush from large tracts of land. This despite the fact that numerous studies have shown that treatment beyond a 100 ft. radius of a structure bears little safety advantage in a fire event. Since bird habitat has already been severely compromised on private holdings the cumulative effects of further habitat destruction needs to be addressed. Song birds

are in decline worldwide and destroying their strongholds puts further stress on populations.

ROADLESS AREA VALUES

The Clear Creek Roadless Area is a relatively small roadless tract, which is bordered by private holdings. In my mind this makes it a very valuable, both to wildlife of all species and to humans seeking quiet solitude and nature. This is a rare area that is close to home and accessible year round. In our neighborhood it has the first wildflowers and abounds in wildlife and bird sightings.

FOC and AWR noted in scoping comments:

Another important issue is the impact on the Clear Creek roadless area. The impacts on the roadless area (proposed as wilderness in HR 3334) must be evaluated. This would include the overt “trammeling” of this area by agency-ignited fire. It also needs to be recognized that most south and west facing slopes in this roadless area are not forested or only lightly forested. Burning here may not do anything to help elk or other species. Without long-term condition and trend data, which has been lacking for years, implications that these actions will increase elk numbers is without substance. Such specious conclusions are contrary to NFMA and NEPA requirements for sound analysis.

FOC and AWR noted in the DEIS comments:

Roadless

The DEIS states that no logging would occur in the roadless area. However, the maps are not so clear. Furthermore, the DEIS does not analyze whether any land contiguous to the roadless area is indeed roadless. Since many logging units border the roadless area, this is a major failure of the DEIS to consider whether any contiguous areas might be affected. Case law in *Kettle Range Conservation Group v. USFS* makes it clear the on-the-ground situation is what determines roadless nature of an area, not past analyses or documents or faulty inventories.

There are two important issues here. The first is the impact to the roadless area. The FEIS does not specifically look at impacts to the untrammled or wild nature of the area, even though it is a key element, if not the key element of wilderness character. (see Attachment 5 and Attachment 6). Nowhere is that issue discussed. The issue of bird habitat is missing in the FEIS analysis, rather the FEIS is big game centric (see page 3-65). As such, the FEIS fails to adequately consider impacts to the roadless area. This violates NEPA and NFMA requirements. NEPA requires the FEIS to adequately describe the affected environment. 40 C.F.R. § 1502.15.

The second issue is whether roadless lands (de facto or inventoried in the 2008 Idaho Roadless Rule) would be affected by logging. The FEIS does not address de facto roadless lands and that may be contiguous to the existing Clear Creek Roadless Area. Further, the FEIS admits that boundary is “imprecise” (See page 3-66). Thus, the FEIS cannot claim little or no impact to the roadless areas and potential wilderness values if the location of the roadless area is imprecise. NEPA and NFMA require the affected

environment to be adequately described, along with the environmental consequences of the proposed action. 40 C.F.R. § 1502.15; 40 C.F.R. § 1502.16. This stunning revelation must be addressed.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA.
2. Drop the prescribed fire in the Clear Creek Roadless Area.
3. Adjust the boundaries of all logging or other units at least 1/2 mile back from the “imprecise” roadless boundary for the Clear Creek Roadless Area, as mapped in the FEIS.

XX- FAILURE TO USE THE BEST AVAILABLE SCIENCE IN THE WILDLIFE ANALYSIS AND LACK OF MONITORING DATA TO CONFIRM WILDLIFE HABITAT PROXIES AND VIABILITY.

We object to the overall inadequacy of the wildlife analysis and the lack of monitoring data to confirm any of the conclusions of that analysis. The analysis makes several erroneous conclusions that are not supported by the best available science and fails to answer the “so what” question of what habitat losses associated with the project mean. The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

FOC and AWR noted in scoping comments, which were incorporated into the DEIS comments:

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of wildlife must be maintained. The Nez Perce National Forest failed to insure viability of MI and TES species to date, as documented in the agency’s own monitoring reports.

The agency has acknowledged that viability is not merely a project area consideration, that the scale of analysis must be broader:

Population viability analysis is not plausible or logical at the project level such as the scale of the Dry Fork Vegetation and Recreation Restoration EA. Distributions of common wildlife species as well as species at risk encompass much larger areas than typical project areas and in most cases larger than National Forest boundaries. No wildlife species that presently occupy the project area are at such low numbers that potential effects to individuals would jeopardize species viability. No actions proposed under the preferred alternative would conceivably lead to loss of population viability. (Lewis and Clark NF, Dry Fork EA Appendix D at p. 9.)

The FS should firmly establish that the species that exist, or historically are believed to have been present in the analysis area are still part of viable populations. Since Forest Plan monitoring efforts have failed in this regard, it must be a priority for project analyses. Identification of viable populations is something that must be done at a specific geographic scale. The analysis must cover a large enough area to include a cumulative

effects analysis area that would include truly viable populations. Analysis must identify viable populations of MIS, TES, at-risk, focal, and demand species of which the individuals in the analysis area are members in order to sustain viable populations.

The fact that the Nez Perce National Forest has not monitored the population trends of many of its management indicator species (MIS) as required by the Forest Plan bears repeating. Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the Forest makes it imperative that population viability be assessed at least at the forest-wide scale (Marcot and Murphy, 1992). Also, temporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has not been done. It is also of paramount importance to monitor population trends (as mandated by the Forest Plan) during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

State-of-the-art conservation biology and the principles that underlie the agency's policy of "ecosystem management" dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective (and perhaps only) way to preserve wildlife diversity and viability (Noss, 1993).

The FS has stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes,⁷ distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." (Mealey 1983.)

Cumulative impacts need to be addressed. Early seral species (both plant and animal) tend to dominate in adjacent landscapes. Habitat security, later seral species and old-growth habitat are therefore more important on the national forests. Managing for more early seral stages on the national forests may shortchange late-seral species, which tend to be rarer.

Harry Jageman noted in his comments:

Wildlife Habitat Analysis

The methods used in the wildlife analysis (Section 3.7.4) appear to be very questionable. The entire analysis appears to be based on stand exam queries and includes very little information on actual habitat use of the various species of concern within the study area. Many of the suitable habitat numbers presented in table 3-28 don't appear to be consistent with numbers presented in the vegetative section of the DEIS. For example, the tables in the vegetation section suggest that there are 16,387 acres (All VRUs) of stands 21 plus inches in diameter, yet only 8,160 acres of nesting habitat is displayed for the pileated woodpecker and 2,066 acres of nesting habitat for the goshawk. Both of these species are known to be

⁷ Subpopulations.

associated with older and larger diameter stands for nesting and it is hard to believe that more the existing stands are not potential nesting habitat. Suitable habitat acreage for several other species appears to have been grossly underestimated. For, example the table only identifies 510 acres of upland habitat that would be suitable for the Western Toad in the entire 43,700 acre project area.

A habitat analysis (Bush and Lundberg 2008) that was done for the entire Nez Perce Forest is referenced for many of the species. However, no updates are given for this report despite the fact that it is reported that over 200,000 acres burned in 2012 on the Nez Perce and Clearwater National Forests and there have been numerous logging projects since 2008. No information is given on how the report relates to the project area and if the habitat acreages reported for the various species in the DEIS are the same as those used by Bush and Lundberg (2008).

A report by Samson (2006) is also referenced. This publication is an internal Forest Service document that has never been published in a peer reviewed journal. According to the DEIS this report is supposed to calculate the acreage that would be required to support a viable population of the various species in the 25 million acre Northern Region. The numbers presented in the DEIS appear ridiculously low if species are to be maintained across their existing and historical ranges as would be required if any of the species were listed under the Endangered Species Act. For example, the DEIS suggests that goshawks would only need only 30,147 acres of post-fledging habitat to maintain a viable population in the entire 25 million acre Northern Region. That is less than 69% of the 43,731 acre project area and 0.1% of the Northern Region.

The cumulative effects analysis is weak or non-existent for all wildlife species. A cumulative effects analysis should have at least been completed for the Clear Creek drainage. The fact that private land data is not readily available is no excuse for not conducting a cumulative effects analysis. The results of the analysis likely would have been much different if the impacts of past and proposed activities on nearby private lands had been included in the wildlife analysis.

The analysis underestimates potential habitat and in turn potential impacts for most species. It has not incorporated an examination of cumulative effects into the analysis. Spatial requirements of territorial species have not been considered and no thresholds of management activity have been set for most species.

Schultz (2010) outlined most of these problems in a critique of Forest Service wildlife analysis. Schultz found that the Forest Service often relies on stand exam queries to determine acres of suitable habitat, but then makes no interpretation as to what that loss of habitat means to the species. Similar to what has been done on Clear Creek; they fail to set meaningful thresholds and assume that habitat losses are insignificant. Schultz (2010) concludes that “the lack of management thresholds allows small portions of habitat to be eliminated incrementally without any signal when the loss of habitat might constitute a significant cumulative impact.”

Schultz (2010) also examined the Sampson assessment (Sampson 2006a and 2006b), which is the basis of the Nez Perce Clearwater cumulative effects defense for the Clear Creek project. She states that the Sampson assessment “suffers from several problems, the most prominent being that the analysis is based on habitat availability, which alone is insufficient for understanding the status of populations (Noon et al. 2003, Mills 2007)”. Her recommendations generally call for more peer review of large-scale assessments and project level management guidelines. She suggests that we must adopt more robust scientifically sound monitoring and measurable objectives and thresholds if we are to be successful in meeting obligation of maintaining viable populations of all native and desirable non-native wildlife species. This has not been done on the Clear Creek project.

An interesting observation of the Sampson assessment is that it focuses on short-term viability and long-term viability using what is called the 50/500 rule (Bessinger 2002). In fact, all six species considered in Sampson’s analysis are all evaluated for short-term viability using this “rule of thumb”.

Sampson did not evaluate long-term viability for the fisher and marten, but he did do so for the goshawk, pileated woodpecker, flammulated owl and black-backed woodpecker. Sampson concluded that “In regard to long-term viability, this conservation assessment has found that long-term habitat conditions in terms of Representativeness, Redundancy, and Resiliency are “low” for all species.” The Clear Creek wildlife analysis does not mention Sampson’s long-term viability conclusions, and only focuses in on his short-term projections, which are based on maintaining 50 individuals (25 male and 25 female). In his analysis, Sampson merely uses home range size for each species and makes assumptions of overlap in ranges of males and females. Home range size is then multiplied by the effective population size (n_e - a number that includes young and non-breeding individuals - Allendorf and Ryman 2002) and this is projected as the amount of habitat required to maintain a minimal viable population in the short-term. This simplistic approach ignores a multitude of factors and makes no assumptions about habitat loss or change over time. For the fisher and marten, Sampson uses a “critical habitat threshold” as calculated in another publication (Smallwood 2002). Some of these numbers have been reported in the FEIS and DEIS for the various species of concern.

There are several problems with such an approach and the risk to the species would be extremely high if any of the species ever reached these levels in the Northern Region. Surely, all six species would be listed as endangered if this was to occur and the probabilities for their continued existence would be very low. There is also no way that National Forest Management Act (NFMA) and Endangered Species Act (ESA) requirements could be met of maintaining species across their range and within individual National Forests with such an approach. Mills (2007) captured the futility of such approach in his book on Conservation of Wildlife Populations: “MVP is problematic for both philosophical and scientific reasons. Philosophically, it seems questionable to presume to manage for the minimum number of individuals that could persist on this planet. Scientifically, the problem is that we simply cannot correctly determine a single

minimum number of individuals that will be viable for the long term, because of inherent uncertainty in nature and management...”

Sampson also admits that “Methods to estimate canopy closure, forest structure, and dominant forest type may differ among the studies referred to in this assessment and from those used by the Forest Service to estimate these habitat characteristics” and that “FIA sample points affected within the prior 10 years by either timber harvest or fire are excluded in the estimates of habitat for the four species” and finally that “FIA does not adequately sample rare habitats”. This especially concerning given the reliance on the FIA queries to identify suitable habitat and the fact that the data used in the analysis is now over 20 years old. We have seen more wildfires in this time frame and large projects like Clear Creek are being scheduled to increase logging at much higher rates than when Sampson did his analysis in 2006.

We therefore object to the use of the Sampson short-term viability analysis in the FEIS. The short-term viability analysis is scientifically unsound and it is very doubtful it could sustain scientific peer review. Schultz (2010) captured this sentiment in her critique: “some interviewees also thought the work should be peer reviewed, especially if it was conducted by USFS management, and several were skeptical that it would survive such review.” We agree with the reviewers.

We object to the fact that the analysis assumes the project will not contribute to cumulative habitat losses at the Forest level, when the Nez Perce/Clearwater has no idea what the cumulative impact of numerous past and proposed projects are having on the species of concern. It is over 28 years since the current Forest Plan was signed, yet there is currently no statistically reliable monitoring information on the impacts of Forest Service activities on any wildlife species of concern. With the possible exception of elk (populations monitored by the Idaho Fish and Game) and the North Idaho Elk Guidelines, there is no habitat proxy that is being used on the Forest that has any field verification. For example, it has not been confirmed that old growth standards are truly protecting old growth related species like the fisher, goshawk, pine marten and pileated woodpecker.

The Forest Service is fond of the argument that viability cannot be discussed at the project level, but they then use habitat numbers outside of the project area to defend excessive development within individual project area. They rationalize that sufficient habitat is available in other areas to make up for losses within the project area. Under this scenario, no project ever creates a significant impact and species are lost by “1,000 cuts” as project after project is allowed to proceed. The Forest Service cannot have it both ways; either they need to have project designs that create minimal impacts to species of concern, or they need to have monitoring information that confirms their habitat proxies are “providing for a diversity of plant and animal communities based on the suitability and capability of the specific land area” as required by the National Forest Management Act.

The wildlife analysis generally relies on queries of Forest Service Stand exam information as the basis of the analysis. Assumptions are made as to what constitutes

suitable wildlife habitat based on four parameters (Primary tree species, Average tree diameter, Tree canopy cover and average stand age) FEIS Table 3-45, Page 160. Most of the queries appear to have weak ties to appropriate scientific publications and large gaps in habitat identification are apparent. There is little investigation into the spatial arrangement of these habitats and little investigation into disturbance factors that may be affecting potential habitat use.

Because of the strict requirements of the queries, much potential habitat appears to have been missed within the project area analysis. For example, we calculated the acreage of each vegetative size class based on information provided in the vegetative section of the FEIS (Table 1) and looked at wildlife species that could be potentially utilize the habitats in each of these VRUs (Tables 2-4). We then compared that data to acreages of suitable habitat from the wildlife analysis and projections of proposed timber harvest (Tables 1-4).

For example, we estimated that four species would find preferred habitat in south facing breakland areas (VRU 3). This VRU is the area most likely to support large diameter ponderosa pine stands preferred by these species (Table 2). Fringed myotis bats like are likely a little more flexible in their habitat use finding habitat in both VRU 3 and VRU 8 (Table 2). Five species of concern find preferred habitat in more the more mesic stand conditions found in the remainder of the project area VRU 8 and Upland areas (Table 3). Six species of concern likely find suitable habitat throughout the project area and/or they have special needs that influence their distribution. The wolverine and lynx are known to prefer higher elevation locations that are generally not well represented in the project area. We do not argue with the lynx and wolverine analysis, which are based on different methodologies (Lynx Conservation Strategy and areas of persistent snow) than the other species of concern.

Large discrepancies were apparent between vegetative and suitable habitat data. For example, there are 16,135 acres of stands in the 21+ size class and 10,327 acres in the 9-21" size category in moist forest VRUs according the vegetation information, yet the FEIS claims there are only 2,066 acres of potential goshawk nesting habitat in the project area. Goshawks are known to be associated with older forests for nesting (Moser and Garton 2009, Hayward and Escano 1989). Another interesting observation is that the size class is unknown for over 10% of the project area (3192 acres of National Forest and 1086 acres of Private Land). It would seem that habitat queries would not give very accurate results if there are no available data for this rather large percentage of the project area.

Table 1 - Acres in Each Forest Size Class as Estimated from the Vegetative Size Tables (FEIS Tables 3-18 to 3-22)

VRU ¹	Non-Forest	< 5"	5-8.9"	9-21"	21"+	Unknown Size Class ²
VRU 3 – (3,030)	182	970	303	455	292	878
VRU 8 (11,350)	568	1703	454	3859	4086	680
VRU 12 (40)	40					
VRU 7 2570	50	687	254	407	1172	
VRU 10 (5170)	5	517	5	1964	2,068	611
VRU 17 (20,485)	615	4097	1844	4,097	8,809	1,023
Private Land? (1086)						1086
Total 43,731	1,460 (3.3%)	7,974 (18.2)	2,860 (6.5%)	10,782 (24.7%)	16,377 (37.5%)	4,278 (9.8%)
Alternative C Regen Harvest		4,156+ (9.5%) 854+ (2.0%)		-1,870 ³ (4.3%) -854 ⁴ (2.0%)	-2,286 ³ (5.2%)	
Alternative C Intermediate Harvest ⁵				3,366	331	

1 - VRU data (42,645 acres) does not add up to 43,711 acres as reported for the project area, presumably 1,086 acres of private land have not been included in VRU totals - There is no known size class information for private land and it appears to have been excluded from all aspects of the analysis including determinations of cumulative impact

2 - It is unclear why the size class of these stands is unknown

3 – Forty-five percent of regen harvest is reported as being in young stands 41-100 years of age (FEIS 3-112). Thirty-percent of regen harvest is reported as being in the 101-149 age class (FEIS 3-112). The other twenty-five percent of harvest (Not reported for unknown reasons) is assumed to be in stands exceeding 150 years of age and presumably these stands have not been considered as old growth. Most stands in the 101-149 and 150+ categories are expected to have some trees over 21 inches DBH. (Note this information was deleted from the FEIS in an Errata sheet, but no substitute information has been provided. We continue to use this as the best

available information provided by the Forest Service on the size class of stands that will be regenerated)

4 – Commercial thin stands in focus areas which may be regenerated

5 – Commercial thinning and improvement harvest that are not expected to change stand size class

Table 2 – Existing Acres in VRU 3 (3330 acres) and VRU 12 (40 acres) - (Low elevation south facing slopes likely to support large diameter ponderosa pine stands and the following wildlife species)

Size Class (DBH)	Existing (Acres)	Flammulated-Owl¹	Pygmy Nuthatch¹	Mountain Quail¹	Ringneck Snake¹	Fringed Myotis^{1,2}
Non-Forest	222					
<5"	970					
5-8.9	303					
9.0-21	455					
21+	292	799	960	187	3,030	192
Unknown	878					

1 - Numbers displayed for the various wildlife species are the estimated suitable habitat acres from the FEIS wildlife analysis, these five species likely find limited habitat in the project area due to overall mesic conditions

2 – Fringed myotis habitat may also extend into VRU 8

Table 3 – Existing Acres in VRU 8 and Upland VRUs (7, 10, 17) – (Areas were more mesic stand conditions predominate and Douglas fir, grand fir and western red cedar are the predominate tree species – these wildlife species of concern are likely to find preferred habitat in these VRUs)

DBH	Existing (Acres)	Marten^{1,2}	Fisher¹	Goshawk¹	Pileated Woodpecker¹	Moose Winter^{1,3}
Non-Forest	1,238		13,570 Winter			
<5"	7,004					
5-8.9	2,557					
9.0-21	10,327					
21+	16,135	17,328	10,037 Summer	2,066	8,160	10,856
Unk.	3,400					

1 - Numbers displayed for the various wildlife species are the estimated suitable habitat acres from the FEIS wildlife analysis

2 – Marten are likely associated with upper elevations and upland VRUs

3 – Wintering moose are likely associated with yew understories in older stands or areas of high shrub abundance in old burns or previously harvested areas. They typically winter at higher elevations than elk and are more likely to be found in upland VRUs in the winter.

Table 4 - Species with special needs likely to be found throughout the project area

DBH	Existing (Acres)	Western Toads^{1, 2}	Other Bats^{1,3}	Black-backed Woodpecker^{1,4}	Elk – Winter/ Summer^{1,5}
Non-Forest	1,460				
<5"	7,974				
5-8.9	2,680				
9.0-21	10,782				
21+	16,377	510	8156	2,357	28,798 (Winter) 43,731 (Summer)
Unk.	4,278				

1 - Numbers displayed for the various wildlife species are the estimated suitable habitat acres from the FEIS wildlife analysis

2 - Western toads could be found throughout the project area, but need streams or other water bodies for breeding

3 - Bats would likely be associated with streams and other water bodies, snags for day roosting and natural caverns or old mines

4 - Black-backed woodpeckers are associated with previously burned areas, diseased trees, and older forests. Density of recently killed snags and diseased trees are important predictors of habitat use by this species.

5 - Elk likely use breakland areas during the winter and move to upland areas during the summer.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA.

XXI– FISHER HABITAT ANALYSIS IS TOTALLY INADEQUATE AND NOT BASED ON THE BEST AVAILABLE SCIENCE.

Harry Jageman noted in his comments:

The approach presented for the fisher appears to be very similar to that which was conducted for other species. The whole analysis is based on database queries that supposedly identify suitable habitat. However, in this case suitable habitat is split into summer habitat which the authors classify as older forest stands exceeding 13 inches in DBH and winter habitat which the authors suggest is saplings and other young stands. While the older forest stand designations (summer habitat) make sense for this species, the winter habitat designations do not. Fishers have been consistently tied to older forest stands in most studies and even by the author's own

admissions the availability of large downed logs over 21 inches DBH are particularly important in the winter. These types of downed logs don't occur in sapling and other young stands. Even the study cited in the DEIS (Jones and Garton 1994) found that 54% of fisher use during the winter was in mature/old growth forest.

The winter range analysis seems completely inconsistent with the current literature for this species. I suggest it be completely revised with more recent literature citations in the FEIS. My remaining comments will only deal with the summer habitat conditions detailed out in the DEIS as I regard the winter range analysis to be in complete error and contrary to the existing literature for this species. Once again suitable summer habitat values appear to be underestimated, but not as badly as for some of the other species. In this case 10,037 acres of old forest is identified as suitable summer habitat. Recall that the vegetation analysis shows over 16,000 acres in size class exceeding 21 inches and almost 11,000 acres in the 9-21 inch size class.

Again I see references to the Bush and Lundberg (2008) study which supposedly shows 400,000 acres of suitable summer habitat on the Nez Perce Forest. Again there is no quantification of how this might have changed due to logging and wildfire since 2008. There is no display of the Bush and Lundberg (2008) data for the project area and there is again no discussion on how the Bush and Lundberg (2008) numbers relate to the figures cited in the DEIS. I see the Sampson (2006) study also cited once again and this time it is suggested that only 100,078 acres would be needed to maintain a viable population across the 25 million acre Northern Region.

FOC and AWR noted:

These problems are not confined to black-backed woodpeckers (or martens), but also include goshawks, pileated woodpeckers, fisher, the two bat species, and the western toad.

Regarding fisher, the DEIS divides winter and summer habitat. However, even the research cited in the DEIS notes the need for old growth during both winter and summer. Thus, it seems the DEIS underestimates the impacts to fisher. Given the high level of accidental trapping of this species in the region, it is of grave concern.

...

In essence, the DEIS fails to look at habitat actually used by the species like fisher, marten, goshawk, black-backed woodpeckers, and pileated woodpeckers. Forest plan monitoring has not been done (or reported) and this may be a reason for the inconsistency with the DEIS analysis of wildlife. Without on-the-ground field work, the agency cannot adequately project impacts to species either on a site-specific or cumulative level.

The fisher analysis appears to be based almost entirely on an older investigation of fisher habitat (Jones 1991, Jones and Garton 1994) and an interpretation of that study that is in sharp contrast to almost the entire body of existing literature on the fisher and even the Jones studies themselves. The analysis suggests that fishers use completely different habitats during the winter and summer and that they prefer open young stands during the winter and older more mature forests during the remainder of the year.

These conclusions are not supported by the current literature (Aubry et al. 2013, Olsen et al. 2014, Raley et al. 2012, Sauder 2014, Sauder and Rachlow 2014, Schwartz et al. 2013, Weir and Corbould 2010). All of these studies and several other studies all suggest that fishers are heavily associated with older forests throughout the year. Even the Jones and Garton (1994) studies found that 54% of fisher use during the winter was in mature/old growth forest.

The discrepancy in these findings appears to be best explained by Sauder 2014 in Chapters 2 and 3 of his dissertation. He found that “fishers selected landscapes for home ranges with larger, more contiguous patches of mature forest arranged in connected, complex shapes with few isolated patches and open areas comprising $\leq 5\%$ of the landscape” (Sauder and Rachlow 2014). However, within those home ranges he found that fine-scale heterogeneity influences habitat selection by fishers and that core areas of high use are often categorized by “intermediate amounts of both landscape edge and high canopy cover forest”. These conclusions help to explain some of the Jones 1991 findings and suggest that some diversity of age class or vegetation structural class is necessary to foster prey species abundance and diversity.

Most studies have found that fishers are reluctant to stray from forest cover and that they prefer more mesic forests (Buskirk and Powell 1994, Olson et al. 2014, Schwartz et al. 2014, Sauder 2014, Sauder and Rachlow 2014, Weir and Corbould 2010). Both Sauder and Rachlow (2014) and Weir and Corbould (2010) predicted the influence of openings on fisher habitat occupancy based on their data. For example, Weir and Corbould predicted that a 5% increase in forest openings would decrease the likelihood of fisher occupancy by 50%. Sauder and Rachlow (2014) suggested that an “increase of open area from 5% to 10% reduces the probability of occupation by fishers by 39%. Sauder and Rachlow (2014) reported that the median amount of open area within fisher home ranges was 5.4%. This was consistent with “results from California where fisher home ranges, on average, contained $< 5.0\%$ open areas” (Raley et al. 2012).

Sauder and Rachlow (2014) report the average home range size is approximately 12,200 acres and for a female fisher and approximately 24,300 acres for a male fisher. Home ranges generally do not overlap greatly for the individual sexes (21.3% for females and 15.3% for males), but male home ranges can overlap female home ranges. Therefore, moister project habitats (40,661 acres) would likely support three or four females and perhaps two male fishers. Preferred habitat would likely occur in upland areas and stands composed of cedar and grand fir forests (Schwartz et al. 2013). Drier breakland south facing slopes especially those supporting ponderosa pine would likely not be preferred by fishers.

In contrast, the FEIS suggests there are only 10,037 acres of suitable fisher habitat in the project area in the summer and 13,570 acres in the winter. This barely enough habitat to support one female fisher, and based on the erroneous conclusion that winter habitat consists of forest openings. This is clearly a conclusion that does not agree with the existing literature. Project File document “120723HersheyDraft.docx” states:

Clear Creek: Primary habitat is found on 27445 acres of GR and WRC forest cover. Approximately, 10037 acres of this forest cover in the mid- to upper elevations are presently suitable fisher summer habitat. Suitable habitat is well distributed throughout the AA, with a greater proportion and better connectivity in the northern half of the AA. Suitable habitat in the southern section of the AA is discontinuous clusters of patches.

Secondary fisher habitat occurs on 5918 acres of DF, LP, AF and S forest cover. Only an additional 249 acres of secondary habitat are presently suitable. All of these acres are contiguous with suitable primary habitat in the northern half of the AA.

Suitable winter fisher habitat is found in 11400 acres of young forest and 5921 acres of seed/sapling forest conditions, approximately 40% of the AA.

Table 1 suggests the existing habitat conditions already are at 21.5% open (natural openings and size class <5” DBH) in the project area and if the condition of unknown stands is added to the total the level is even higher. Proposed alternative C could add 9.5 to 11.5 % more openings, depending on what happens to commercial thinning stands within the focus areas. Sauder and Rachlow (2014) suggest that habitat potential for fishers would potentially drop to zero within the project area under this scenario. This of course would be dependent on the distribution of the proposed harvest, which Sauder and Rachlow (2014) determined was a very important factor in fisher home range selection and probability of occupancy. Such work is beyond the capabilities of the Friends of the Clearwater and the other objectors, but should have been done by the Forest Service in the development of the Clear Creek Project.

The analysis has other problems, particularly the assertion that 100,078 acres (Sampson 2006b) could provide enough suitable habitat for a viable population of fishers in the entire Northern Region (an area of 25 million acres). We believe this number may have been converted in error since the actual number in Sampson’s (2006b) report is 301 hectares (74,347 acres). At any rate, 100,078 acres based on home range size and home range overlap (Sauder 2014), could only support perhaps 10 females and 5 males. This would hardly constitute a viable population at any level, let alone the entire Northern Region.

Project File document “120723HersheyDraft.docx” states, “Fishers are now distributed throughout most of their historical territory in the Clearwater drainage, although **the population remains at a low level** (Buskirk et al. 1994). Current fisher population numbers or trend are unknown in Idaho (IDFG 2005)...” (Emphases added.)

Sauder (2014) modeled habitat across Idaho and Montana and suggested there 8,785,000 acres of probable habitat and 2,678,000 acres of high-quality habitat. He predicted that

10.4% (914,000 acres) of the probable habitat and that 11.6% (310,648) of the high-quality habitat would be found on the Nez Perce National Forest. Given a female home range size of 12,200 acres and 21.3% overlap and a male home range of 24,300 acres and a 15.3 % overlap of ranges, this means the Nez Perce Forest could support habitat for approximately 86 female and 44 male fishers. As previously discussed, the Clear Creek project alone could result in a loss of habitat for 4 females and 2 males.

Acreage numbers can be misleading when dealing with a wide ranging predator like the fisher. The species needs large areas for recovery and most of the preferred habitat on the Nez Perce Clearwater National Forest that is preferred by this species has been target of historical and proposed timber management activities (Nez Perce Clearwater Forest Plan Revision Proposed Action). Sauder (2014) accurately portrays his concerns with this statement: “Although these figures represent relatively large areas, taken in the context of the large forested landscapes that individual fishers require (male and female home ranges average 98.4 km² and 49.3 km², respectively; Sauder and Rachlow 2014), this does not constitute a surplus of habitat”. Looking at potential population numbers it is a little easier to understand, why the species has been extirpated across much of its range. The literature (Sauder 2014) suggests that roadless areas will not be the salvation for this species, and that management guidelines are sorely needed in areas like Clear Creek to assure species viability.

Sauder suggests that five National Forests (Clearwater, Nez Perce, Coeur d’Alene, Kaniksu, and Kootenai) hold the key to recovery of the species in the Northern Region. These Forests along with the St. Joe National Forest (Number 6 on the list) are currently being managed as three Forests (Nez Perce/Clearwater, Idaho Panhandle and the Kootenai). They include the Forests with the highest historical and proposed timber cuts in the Region and most of the existing and proposed harvest is scheduled in habitats preferred by fishers. On the Nez Perce-Clearwater Forests this area has been termed the “Front Country” and several large projects have been proposed for these areas (Slate Creek, Lolo Creek, Orogande, French Larch, Johnson Bar, etc.). The Nez Perce-Clearwater Forests have no idea on what the cumulative impact of all this activity will be on fishers. Much like the Clear Creek analysis they dismiss all impacts.

We therefore request that the Clear Creek project analysis be redone in accordance with the latest scientific findings (see 40 CFR 1502.24). The Nez Perce / Clearwater Forest must redesign the project to have minimal impact on fishers or prove that the cumulative impact of this project and several others will not contribute to a trend towards federal listing for the species. As presently designed the proposed project will result in almost entire loss of the species from the project area (Sauder and Rachlow 2014) and the only real question that remains is how this and other projects will affect the species at the Forest level. The Nez Perce / Clearwater National Forest officials have not answered this question.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3).

2. Drop all units within fisher habitat.

XXII- FRINGED MYOTIS LONG-EARED AND LONG-LEGGED MYOTIS HABITAT ANALYSES ARE NOT SUPPORTED BY THE BEST AVAILABLE SCIENCE AND SIGNIFICANTLY UNDERESTIMATES SUITABLE HABITAT AND PROJECT LEVEL IMPACTS

FOC and AWR noted:

The wildlife habitat and the vegetation sections seem to be inconsistent. Some of the numbers in the chart on page 3-84 don't match the descriptions of vegetation. For example, the VRU tables suggest more acreage of stands of trees 21 inches and greater than is habitat for pileated woodpeckers or goshawks, which are old growth indicator species or for the two bat species, who use these older trees. This problem exists for other species.

The DEIS references a 2008 report done for the Nez Perce National Forest and a 2006 internal agency document that was not published in a peer-reviewed publication. There are assumptions that fail logic and science, including assumption that very little habitat is needed to maintain species (the 2006 report) across the entire region (for example, see page 3-90 for black-backed woodpeckers). It also seems the broad habitat estimates are different than the ones used in the DEIS and they don't take into account recent logging and fires. For example, the DEIS recognizes 700,000 acres of black-backed woodpecker habitat on the Nez Perce National Forest (about 30 percent of the forest), yet less than 2,400 acres in the project area (about six percent of the project area). Another example is marten, where the amount of mature stands proposed to be clearcut are greater than the amount of habitat lost. It seems there are apples and oranges comparisons when looking at habitat on the larger scale versus on the site-specific scale. These problems are not confined to black-backed woodpeckers (or martens), but also include goshawks, pileated woodpeckers, fisher, the two bat species, and the western toad.

Harry Jageman noted:

The amount of existing habitat for all bat species appears to have been significantly underestimated. The vegetative section of the DEIS identifies over 16,387 acres of stands that have an average DBH of over 21 inches in diameter and 10,786 acres that are in the 9-21 inch size class category (All VRUs). Yet, the DEIS only identifies 8,157 acres of potential habitat for the long-eared and long-legged myotis bats and 192 acres for the fringed myotis bat. These figures suggest that the amount of suitable habitat for these three species has been significantly underestimated. This in turn has resulted in significant underestimates of potential habitat loss for all three of these bat species.

Second, the importance of suitable habitat on National Forest lands has likely been underestimated by the failure to examine nearby private lands in the analysis. Areas

along lower Clear Creek would likely be attractive to bats because of the increased insect abundance that would be found along the stream. However, past logging on private land has removed many of the snags and large trees that would have been attractive as roost sites in this area. It is likely that bats would move back and forth between from high value foraging sites along lower Clear Creek to better day roosting sites in the upper drainage. Such behavior has been demonstrated to occur on the nearby mixed ownership lands in the Elk River Drainage of the Clearwater National Forest (Lacki et al. 2010).

Third, there appears to be an overestimation of the impacts of fire suppression on bat habitat for the no action alternative. The contention that stands will get denser is likely only appropriate on the breaklands habitats where understory fire plays a more active role (VRU 3 and 8). These types only occur on 14,380 acres or 33% of the project area. Where understory fire plays a minor role as in the moist upland areas (VRU 7, 10 and 17), stand density is more likely to decrease due to stand competition and overstory shading.

The wildlife analysis accurately captures that fringed myotis bats are associated with drier forest types particularly Ponderosa Pine (Keinath 2004, Lacki and Baker 2007). The query for suitable habitat in the analysis appears to even make some sense. The query focus is on older Ponderosa Pine and Douglas fir stands (>100 years old and > 12 inches DBH). Such stands have been shown to be important for this species (Keinath 2004).

However, the elimination of stands with over 80% canopy may have unduly eliminated several stands as potential habitat. Lacki and Baker (2007) demonstrated that most roost snags extended above the existing canopy by an average of 33.8 feet and were larger than random snags (32.5 inches for roost trees and 20.8 inches for random snags). Random snags generally had heights that did not extend above the existing canopy (-8.2 feet). Roost trees occurred in stands with more trees per acre (239 vs 119 per acre) and higher basal areas of trees over 9.8 inches in diameter (125.5 ft²/acre vs 69.7 ft²/acre). In the relatively moist project area, it is not uncommon for stands to exceed 80% crown closure.

We think the amount of suitable habitat has been underestimated, largely due to the <80% crown closure restriction and previously discussed problems with lack of stand information for 10% of the project area (Table 1). More importantly, if one assumes the analysis of potential habitat is even close to accurate, then it does not appear that the Nez Perce /Clearwater assigns much importance to maintaining habitat for this species. The analysis suggest there are only 192 acres of suitable habitat, Alternative C will eliminate 93 acres due to regeneration harvest and allow prescribed fire in 53 acres. That means 48.4% of the existing habitat will be eliminated and another 53 acres (27.6 %) could be lost due to prescribed burning operations. This seems very risky given the limited available habitat, rare occurrence in Idaho bat surveys and the imperiled status (FEIS 3-171) of the species in the State of Idaho.

We think the Nez Perce/Clearwater National Forest really needs to examine their habitat analysis for this species. We believe the species is likely to be found in lower elevation areas of the project area on breakland landtypes (VRU 3, VRU8 and VRU 12). One hundred and ninety-two acres of suitable habitat seems to be a very small number, given 14,420 acres of breakland types (VRU 3, VRU 8 and VRU 12) in the project area and the fact that a large percentage of that habitat is in larger diameter forest stands preferred by the fringed myotis. The vegetation information presented in the FEIS suggests there are at least 4,314 acres in the 9-21 DBH category and 4,328 acres in the 21+ DBH category in breakland areas. The species has been recorded less than five miles from the project area and suitable habitat is thought to exist (FEIS 3-171). The cumulative effects analysis needs to include nearby low elevation habitats along the Clearwater, Lochsa and Selway Rivers.

The FEIS analysis for the long-eared and long-legged myotis is very similar to that described for the fringed myotis. The only difference in the stand exam query used for the analysis is that all tree species are selected as proposed habitat instead of just ponderosa pine and Douglas fir. This change has generated more suitable habitat (8,157 acres), but it still appears to be very low as compared to what is reported in the vegetation analysis. We believe these species could occur throughout the project area as evidenced by capture of two individuals in grand fir forest older than 130 years (FEIS 3-171). The data vegetation data suggests there are 16,377 acres of forest with an average DBH exceeding 21+ inches and 10,782 acres in the 9-21 inch category.

Once again, it really appears that the 80% crown closure factor is severely restricting the results of the query and strongly influencing habitat loss determinations. Lacki et al. (2010) did not find that canopy closure was not an important consideration in the selection of roost trees by long-legged myotis bats in three different study areas. In Washington, important factors were roost tree height, surface area of exfoliating bark, and if the tree had a broken top. Bats selected relatively recently dead snags whose height extended above the general canopy. Intact snags were preferred over broken topped snags, since they were more likely to extend above the canopy. In Oregon, bats preferred areas with high snag basal area and a diversity of stands within 250 meters of the roost tree. Bats in Oregon also preferred trees without broken tops. In Idaho, bats preferred roost trees in stands with lessor amounts of edge and fewer stand types within 750 meters of the roost tree.

We think the Forest Service needs to reexamine the habitat analysis for the long-legged and long-eared myotis. Our review suggests that suitable habitat can be found over a much larger area of the analysis area than what is projected by the Forest Service. By narrowly defining habitat, we believe that the Forest Service has underestimated the project level impacts of the proposal on habitat for the long-eared myotis and long-legged myotis. Instead of the 674 acres habitat loss projected by the Forest Service, we believe that most stands scheduled for timber harvest will cause habitat loss for these two species. Habitat will be degraded almost entirely within regeneration harvest units (4156 acres) and snag levels and forest structure will be degraded in commercial thinning (4,220 acres) and improvement harvests (331 acres). Much like the situation for most of

the other wildlife species, we anticipate much higher levels of impact than predicted by the Forest Service.

The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3).

XXIII – THE BLACK-BACKED WOODPECKER HABITAT ANALYSIS IS NOT SUPPORTED BY THE BEST AVAILABLE SCIENCE AND SIGNIFICANTLY UNDERESTIMATES SUITABLE HABITAT AND PROJECT LEVEL IMPACTS

Harry Jageman noted:

Again there seems to be a great deal of underestimation of potential black-backed woodpecker habitat in the project area and the analysis suggests there are only 2,357 acres of potential habitat. Again this is despite the fact that over 27,173 acres of the 43,731 acre project area is composed of stands in size classes greater than 9 inches DBH (DEIS Vegetation Section). With this low estimate of existing habitat it is not surprising that impacts are only predicted to 420 acres for alternatives B and C and 363 acres for Alternative D.

The DEIS appears to suggest that any loss of black-backed woodpecker habitat in the project area is insignificant because there a great deal of habitat outside the project area. However, there are many problems associated with this approach. First, under this approach project area impacts never get addressed and loss of habitat is then considered unimportant within the project area.

Second, there is usually no accounting for changing habitat conditions in other areas that might affect totals outside of the project area. For, example it is cited in the DEIS that Bush and Lundberg (2008) identified 700,000 acres of black-backed woodpecker habitat on the Nez Perce National Forest in 2008. What has happened to those 700,000 acres since 2008? Has any of it been logged? How much of the 700,000 acres will be affected by the Clear Creek proposal? Are the acreages identified by Bush and Lundberg (2008) the same as those identified in the DEIS? How has the 200,000 acres of wildfire mentioned in the DEIS affected the existing stands identified by Bush and Lundberg? Have some stands been eliminated because the fire burned too hot or has more habitat actually been created in new areas? I have no real idea from the information presented in the DEIS.

Species get gradually eliminated and placed at risk a project at a time. That is why impacts from each individual projects need to be evaluated site specifically and that agencies need to make scientifically sound estimates of cumulative effects. No

real cumulative effects analysis has been done nor have any site specific estimates of population loss for each of the alternatives been conducted. Habitat loss has been used as a proxy for population impact, but even that does not appear to have been accomplished in a realistic and professional manner.

The suggestion in the DEIS that 29,406 acres could provide sufficient habitat for the entire Northern Region (an area of 25 million acres) is both scientifically unsound and would not meet the intent of the Endangered Species Act if the black-backed woodpecker was ever considered for listing. The endangered species act requires species to be distributed throughout their historical range which could never be accomplished within such a small area.

How many black-backed woodpeckers can be supported in the project area prior to the project and how will that change after the project is implemented? Are there portions of the area that are no longer suitable habitat? Do activities on nearby private land cause greater importance to be assigned to the National Forest? For example, have snag and diseased tree density been significantly reduced on private land?

FOC and AWR noted:

The DEIS references a 2008 report done for the Nez Perce National Forest and a 2006 internal agency document that was not published in a peer-reviewed publication. There are assumptions that fail logic and science, including assumption that very little habitat is needed to maintain species (the 2006 report) across the entire region (for example, see page 3-90 for black-backed woodpeckers). It also seems the broad habitat estimates are different than the ones used in the DEIS and they don't take into account recent logging and fires. For example, the DEIS recognizes 700,000 acres of black-backed woodpecker habitat on the Nez Perce National Forest (about 30 percent of the forest), yet less than 2,400 acres in the project area (about six percent of the project area). Another example is marten, where the amount of mature stands proposed to be clearcut are greater than the amount of habitat lost. It seems there are apples and oranges comparisons when looking at habitat on the larger scale versus on the site-specific scale. These problems are not confined to black-backed woodpeckers (or martens), but also include goshawks, pileated woodpeckers, fisher, the two bat species, and the western toad. ...

In essence, the DEIS fails to look at habitat actually used by the species like fisher, marten, goshawk, black-backed woodpeckers, and pileated woodpeckers. Forest plan monitoring has not been done (or reported) and this may be a reason for the inconsistency with the DEIS analysis of wildlife. Without on-the-ground field work, the agency cannot adequately project impacts to species either on a site-specific or cumulative level.

We agree with the FEIS conclusions that the black-backed woodpecker is associated post-fire situations (Hutto 1995, Saab et al. 2007) and that "old forests generally allow

black-backed populations to persist between fires in regions with long fire intervals.” We also agree that black-backed woodpeckers will likely be maintained in the project area “by dying and recently dead standing trees” since there has been only one 36 acre fire in the project area in recent times (FEIS 3-173). However, we disagree with the conclusions of the analysis that the Clear Creek Alternative C would only impact 420 acres of potential habitat and that there are no long-term consequences of the proposal to the black-backed woodpecker.

First, we believe the amount of potential habitat has been significantly underestimated within the project area due to overemphasis on tree species and live tree data in the stand exam queries that were used to identify potential habitat. There is also the previously mentioned problem with the lack of existing data for over 10% of the project area. Dudley et al. (2012) suggested that tree species “was not important for discriminating between nest and non-nest habitats” in drier habitats of southwestern Idaho. Similar findings have been observed in other studies and most investigations in unburned forests, suggest the density of live diseased trees, snags and downed wood are more important than tree species in determining habitat use (Bull et al. 1986, Bonnot et al. 2008 and Tremblay et al. 2010). Larger trees are generally preferred for foraging in all locations and even in old burns (Hoyt and Hannon 2002, Nappi and Drapeau 2009, Dudley et al. 2012).

We could find no investigations of the use of unburned forests by black-backed woodpeckers in cedar habitat types of Northern Idaho that would be similar to the project area, but the species is known to respond to wildfires and is commonly found in burns in Northern Idaho and Western Montana (Hutto 2008). It is reasonable to assume that the species will also make use of cedar and grand fir forests, if diseased and dead trees are available.

As stated in the FEIS, grand fir is the most common cover type in the project area and there is obviously concern about diseased and dying trees. In the nearby Blue Mountains of Eastern Oregon (Bull et al. 1986, Nielsen-Pincus 2005), it was found that grand fir cover types were used approximately 27% of the time for nesting in Bull’s 1970s study and 14% of the time in Nielsen-Pincus’s study of the same general area in 2003-2004. Mean densities of black-backed woodpeckers was not significantly different for three different species group where the size class exceeded 16 inches DBH, and averaged 1.4 birds/100 ac in Douglas-fir/ponderosa pine, 1.6 birds/100 ac in Grand fir, and 1.0 birds/100 ac in pure ponderosa pine (Nielsen-Pincus 2005).

We believe the analysis should be upgraded to focus on numbers of diseased live and recently dead trees. This was the approach taken by (Bush and Lundberg 2008) in their assessment of available habitat on the Nez Perce/Clearwater National Forest. They only selected plots with ≥ 8 recently dead trees between 8”-16” inches in diameter. We are not sure why they did not include trees greater than 16 inches as these have been shown to be preferred by black-backed woodpeckers (Dudley et al. 2012). It is unclear why the FEIS takes an entirely different method of identifying preferred habitat and is not in concurrence with either the Bush and Lundberg (2008) assessment or current literature.

We think the analysis should include grand fir and cedar types and that all missing data should be determined prior to running stand exam queries. We believe with over 16,377 acres of older forest over 21 inches DBH and 10,782 acres of forest in the 9-21 inch category there should be much more suitable habitat in the project area for the black-backed woodpecker.

Second, we do not agree with the conclusion that commercial thinning will have no effect on the black-backed woodpecker. Such treatments are designed to remove diseased trees and many existing snags will be lost due to safety concerns associated with the actual logging. These sanitized stands will likely change in stand character so that use by black-backed woodpeckers would be highly unlikely. USDA Forest Service 2011c states:

Hutto (2008), in a study of bird use of habitats burned in the 2003 fires in northwest Montana, found that within burned forests, there was one variable that exerts an influence that outstrips the influence of any other variable on the distribution of birds, and that is fire severity. Some species, including the black-backed woodpecker, were relatively abundant only in the high-severity patches. **Hutto's preliminary results also suggested burned forests that were harvested fairly intensively (seed tree cuts, shelterwood cuts) within a decade or two prior to the fires of 2003 were much less suitable as post-fire forests to the black-backed woodpecker and other fire dependent bird species. Even forests that were harvested more selectively within a decade or two prior to fire were less likely to be occupied by black-backed woodpeckers.** (Emphasis added.)

Hejl (undated) finds that "In the logged study areas, Black-backed and Three-toed Woodpeckers, and Brown Creepers generally were only found in unlogged patches." Finally, we would like to discuss the consequences of the actions being pursued by the Nez Perce/Clearwater on species like the black-backed woodpecker from an ecological perspective. In a recent paper, Hutto (2008) states: "consider the question of whether forests outside the dry ponderosa pine system are really in need of "restoration." While stem densities and fuel loads may be much greater today than a century ago, those patterns are perhaps as much of a reflection of human activity in the recent past (e.g., timber harvesting) as they are a reflection of historical conditions (Shinneman and Baker 1997). Without embracing an evolutionary perspective, we run the risk of creating restoration targets that do not mimic evolutionarily meaningful historical conditions, and that bear little resemblance to the conditions needed to maintain populations of native species, as mandated by law (e.g., National Forest Management Act of 1976)."

The actions proposed on the Clear Creek "Restoration" Project will significantly reduce the number of insect infested live and recently dead trees in the project area. When the Clear Creek project is coupled with other actions being taken across the Nez Perce / Clearwater National Forest (Johnson Bar Salvage, Lower Orogrande, Little Slate, Lolo Bugs, French Larch, etc.) it is hard to ignore Hutto's concerns. Here we have two Forests where moist conditions predominate and the dry ponderosa pine conditions are the exception, yet we are proposing a variety of "restoration" actions that are founded on dry ponderosa conditions. Emphasis on thinning of moist types and removal of grand fir and Douglas fir from existing stands is good evidence of this misdirected thinking.

At any rate, emphasis on stand thinning and salvage of dying trees is of a concern for the black-backed woodpecker (Hutto 2008, Dudley et al. 2012, and Tingley et al. 2014). The Clear Creek Project will do a great deal of that in the name of restoration and these actions are likely to lead to the “long-term” viability risks for this species that Samson (2006a) alludes to in his Conservation Assessment for this species. We object that long-term conclusions of Samson’s report have not been mentioned in the Clear Creek FEIS, and that highly questionable short-term viability projections have been used to help justify the project. As previously mentioned we agree with Samson’s long-term conclusions, but feel his short-term conclusions are very dubious.

The Bush and Lundberg (2008) queries appear to be on the right track for this species, since the species is dependent on dead and diseased trees. These queries seem to be a much more accurate way of predicting black-backed woodpecker use than the project level queries. We are concerned about the accuracy of the Bush and Lundberg (2008) queries given that the data behind them is likely over 20 years old by now. As acknowledged in the FEIS and by Dudley et al. (2012), younger snags less than six years of age are generally preferred by this species.

The black-backed woodpecker is a Sensitive species, and is highly depending upon natural processes of tree mortality in the ecosystem. Cherry (1997) states:

The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the ‘healthy’ forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The viability of black-backed woodpeckers is threatened by the Forest Service’s fire suppression and other “forest health” policies which specifically attempt to prevent its habitat from developing. “Insect infestations and recent wildfire provide key nesting and foraging habitats” for the black-backed woodpecker and “populations are eruptive in response to these occurrences” (Wisdom et al. 2000). A fundamental purpose of the Clear Creek project is to negate the natural occurrence that the black-backed woodpecker biologically relies on; the emphasis in reducing the risk of stand loss due to stand density coupled with the increased risk of stand replacement fire events. This emphasis occurs on a large portion of the Forest. Viability of a species cannot be assured, if habitat suppression is a forestwide policy.

Dolan, 1998b states in regards to impacts on the black-backed woodpecker due to fire suppression and post-fire logging states:

It seems that we have a huge cumulative effects problem here, and that each salvage sale removes habitat that is already very limited. We are having

trouble avoiding a “trend to federal listing” call for the BBWO in salvaging burns, unless comparable acres of fire-killed dead are being created through prescribed burns.

The comments by other biologists attached to Dolan, 1998b reveal that the Forest Service has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers.

The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3).

XXIV. THE GOSHAWK HABITAT ANALYSIS IS NOT SUPPORTED BY THE BEST AVAILABLE SCIENCE AND SIGNIFICANTLY UNDERESTIMATES SUITABLE HABITAT AND PROJECT LEVEL IMPACTS.

We object to the inadequacy of the goshawk analysis and the fact the best available science has not been utilized in developing a management strategy for this species. The analysis does an incomplete job of first identifying potential habitat and then of addressing the impacts of the project on the species. The analysis makes inaccurate estimates of potential habitat, and then tries to rationalize minimal impacts to the species by predicting that very little potential habitat will be impacted.

Harry Jageman noted:

Once again the amount of available nesting habitat appears to have been significantly underestimated. The idea that only 2,066 acres out of the available 16,387 acres of forest over 21 inches DBH and 10,786 acres of forest between 9 and 21 inches DBH doesn't make any sense. It appears that impacts to goshawk habitat have been significantly underestimated as a result of this estimate. There is also no discussion regarding the distribution of this habitat which is likely critical to a territorial species like the goshawk. For example, if the entire nesting habitat is located in one area it will only be useful to the goshawks nesting in the territory that contains that nesting habitat.

Second the same approach that has been cited for several other species is presented once again. The study by Bush and Lundberg (2008) suggests there are 275,000 acres of post-fledgling habitat on the Nez Perce Forest. Again, there is no analysis how this study relates to the project area and determinations of suitable habitat actually used in the analysis. In fact there is not even any discussion regarding post-fledgling habitat in the DEIS as only nesting habitat is considered. No attempt has been made to track how this habitat may have changed since 2008 and once again I

see assertions that only 30,147 acres of post-fledging habitat is needed to meet the requirements of goshawks across the 25 million acre Northern Region (Samson 2006). Such an assertion again seems fairly ridiculous given the current range and distribution of the species.

The analysis talks about estimated population size of goshawks in Idaho (5,600 birds) and the Northern Rockies (3,900 birds), but makes no mention of how many nesting pairs of goshawks could be supported in the project area. As territorial species with territory sizes of approximately 4000-6000 acres (Reynolds et al. 1992) this should be a relatively easy calculation for the project area.

I believe the current goshawk analysis is inadequate because it fails to account for how the project area is actually being utilized by goshawks. There is no attempt to figure out existing habitat use and how that use might be impacted by the project proposal. The analysis presented in the DEIS relies on nebulous habitat assessments that are neither current nor accurately reflect the existing habitat potential for this species. Under this approach, no timber sale will ever impact goshawk habitat because there is always habitat “somewhere else” that will support the species. However, no actual accounting of this habitat and its changing condition is ever presented.

As an alternative method to the weak analysis presented in the DEIS, I suggest an approach that identifies potential goshawk territories in the study area. Do these potential territories currently have enough suitable habitat to support the species including nesting habitat, areas for post-fledgling use and suitable foraging areas? What will be the impact of the proposal? Will nesting habitat be lost, will post-fledgling habitat be fragmented and will sufficient prey species be maintained? In short, the site specific impacts of the proposal on goshawk habitat needs to be discussed.

FOC and AWR noted:

The wildlife habitat and the vegetation sections seem to be inconsistent. Some of the numbers in the chart on page 3-84 don't match the descriptions of vegetation. For example, the VRU tables suggest more acreage of stands of trees 21 inches and greater than is habitat for pileated woodpeckers or goshawks, which are old growth indicator species or for the two bat species, who use these older trees. This problem exists for other species.

The DEIS references a 2008 report done for the Nez Perce National Forest and a 2006 internal agency document that was not published in a peer-reviewed publication. There are assumptions that fail logic and science, including assumption that very little habitat is needed to maintain species (the 2006 report) across the entire region (for example, see page 3-90 for black-backed woodpeckers). It also seems the broad habitat estimates are different than the ones used in the DEIS and they don't take into account recent logging and fires. For example, the DEIS recognizes 700,000 acres of black-backed woodpecker habitat

on the Nez Perce National Forest (about 30 percent of the forest), yet less than 2,400 acres in the project area (about six percent of the project area). Another example is marten, where the amount of mature stands proposed to be clearcut are greater than the amount of habitat lost. It seems there are apples and oranges comparisons when looking at habitat on the larger scale versus on the site-specific scale. These problems are not confined to black-backed woodpeckers (or martens), but also include goshawks, pileated woodpeckers, fisher, the two bat species, and the western toad. ...

In essence, the DEIS fails to look at habitat actually used by the species like fisher, marten, goshawk, black-backed woodpeckers, and pileated woodpeckers. Forest plan monitoring has not been done (or reported) and this may be a reason for the inconsistency with the DEIS analysis of wildlife. Without on-the-ground field work, the agency cannot adequately project impacts to species either on a site-specific or cumulative level.

There is no recognition in the wildlife analysis that the goshawk is a territorial species and there is no attempt to address how the proposal might impact potential territories of goshawk use within the analysis area. Previous work (Reynolds et al. 1992) has outlined approaches that could have been utilized, and we think these approaches would have identified more meaningful results than just running a set of stand exam queries and reporting the results. We think that without meaningful thresholds of habitat loss and no monitoring of goshawk populations at the Forest level that projects will continue to degrade goshawk habitat across the Nez Perce/Clearwater over time (Schultz 2010, Schultz 2012). This was basically, the long-term conclusion of the Sampson (2006a) Conservation Assessment that the Nez Perce/Clearwater failed to report in the Clear Creek FEIS.

We object to the Forest's strong reliance on the short-term viability analysis that was done for the goshawk (Sampson 2006b) and its use in the Clear Creek analysis. The analysis is based on maintaining a very small number of goshawks (25 male and 25 female) across the entire Forest Service Region One and uses very small estimates of home range size to determine habitat needs for the minimum viable population. It does not include adequate monitoring goshawk populations at any level (Region or Forest) and includes no tests of its habitat proxies to see if they are actually protecting goshawks populations at the Forest and Regional levels.

We also object that the conclusions of the long-term viability analysis (Sampson 2006a) have not been included in the Clear Creek FEIS. Sampson (2006a) concluded that the long-term viability analysis is "low" for the goshawk and three other species he evaluated. He based these findings on a variety of factors, but one of the main issues is that older forests needed by these species are gradually being reduced on all ownerships. Projects like Clear Creek move large acreages to younger age classes on National Forest lands and most of the existing older forests on State and private land have already been eliminated. Sampson (2006a) indicates that representativeness, resiliency and redundancy are all "low" in the long-term for the four species he evaluated (goshawk, pileated

woodpecker, black-backed woodpecker, and flammulated owl) in his conservation assessment. We agree with that conclusion and believe it should have been reported in the Clear Creek FEIS.

Like the analysis for most of the other wildlife species, the amount of goshawk nesting habitat appears to have been significantly underestimated in the FEIS and in turn this has significantly reduced the expected impact of proposed Alternative C on the goshawk. Even though there are 16,135 acres of forest over 21+ inches and 10,327 acres in the 9-21 inch size class DBH on moist forest types preferred this species for nesting the analysis suggests there are only 2,066 acres of nesting habitat.

Moser and Garton (2009) reported that all goshawk nests examined in their study area were found in stands whose average DBH of overstory trees was over 12.2 inches and all nest stands had $\geq 70\%$ overstory tree canopy. They described their findings as being similar to those described by Hayward and Escano (1989). Hayward and Escano reported that nesting habitat “may be described as mature to overmature conifer forest with a closed canopy (75-85% cover). . . .” Despite the fact that these studies are most pertinent studies of goshawk habitat in Northern Idaho, the Clear Creek wildlife analysis has excluded most of the findings in their analysis. This can be seen in FEIS Table 3-45 where all stands exceeding 70% crown closure have been eliminated as potential nesting habitat. The Bush and Lundberg (2008) queries also make similar upper limit restrictions on nesting habitat. On the Nez Perce Forest, Bush and Lundberg limit their queries for goshawk nesting to stands with average DBH <18 inches and crown closure of $<71\%$. Stands with conditions exceeding these numbers are actually some of the best habitat according to Hayward and Escano (1989) and should not have been excluded.

How this oversight then impacts the analysis can then be figures for impacts to potential habitat. There are over 4,156 acres of regeneration harvest, 4,221 acres of commercial thinning, 331 acres of improvement harvest, 1,371 acres of prescribed burning and no available information for over 10% of the project area, yet the FEIS makes the outlandish claim that Alternative C will only impact 93 acres of goshawk nesting habitat by regeneration harvest and 45 acres by prescribed fire. While at the same time the analysis makes the argument that 4,654 acres of MA 20 and 10,700 acres of the RHCAs “would be available for goshawk use”. The implied suggestion being that these areas are also suitable for nesting. How can these 15,354 acres be available for nesting if there are only 2,066 acres of suitable nesting habitat?

Moser (2007) and Moser and Garton (2009) reported the mean home range size of male goshawks ($N=7$) was 12,710 acres and female goshawks ($N=12$) was 9,532 acres in Northern Idaho. Studies in other areas have reported smaller home range sizes in the neighborhood of 5,000-6,000 acres (Reynolds et al. 1992). Moser’s larger home range sizes may be related to the fact that Moser’s study was conducted in an industrial forest landscape with a large amount of timber harvest. Other factors may be differences in methodology, use of satellite technology by Moser (2007) or differences prey availability in Northern Idaho.

Moser reported that, home range size was largely related to nesting success and the amount of openings and mature forest within the home range. Birds of both sexes with successful nests generally had smaller home ranges. For example, males with successful nests (N=4) had an average home range size of 9,657 acres and females with successful nests (N=8) had an average home range size of 6,600 acres. Male bird home range size increased as the number of openings in the home range increased and the amount of closed canopy forest decreased, but these factors weren't significant for female birds.

These numbers have some major implications for both the project level analysis and the short-term viability analysis conducted by Sampson (2006b). First let us discuss the project area analysis. We believe an approach should have been conducted in the project area that would have considered the territoriality of the species and the habitat requirements within each territory. For, example the project area is 43,731 acres but only about 40,661 acres are moist habitats preferred by the goshawk. Using Moser's numbers for the home range size of a successful nesting female bird this suggest that perhaps 6 nesting pairs of goshawks could utilize the project area. The job of the wildlife analysis at the project level, therefore, is to predict how these six potential home ranges have been impacted by past actions, the new proposal and any other foreseeable actions. In short, a cumulative effects analysis must be completed.

There are no formal goshawk management guidelines for the Pacific Northwest, but management recommendations for the Southwestern United States (Reynolds et al. 1992) have suggested a way on how this can be done. They suggest that at least 180 acres of suitable nesting habitat be maintained in each goshawk home range. They suggest this nesting habitat be maintained in uncut blocks of at least 30 acres in size and that at least three suitable nesting areas be maintained in each home range. When possible they recommend three additional replacement nesting areas. This recommendation fits well with the findings of Moser and Garton (2009) who found that alternate nest sites will be used within the home range if the previous year's nest site is lost for some reason. Moser and Garton (2009) experimentally clearcut nest stands after the nesting season (average harvest unit size 104 acres) and compared use with unharvested nest stands. They found goshawks, re-nested when approximately 39% of the post-fledging area (164 acres) remained as potential nesting habitat.

Reynolds recommended maintaining post-fledging areas of at least 60% older forests around the uncut nest stands. Moser and Garton (2009) suggested that this could be potentially reduced to 39%, but this will likely place greater risk on the species and we think the more conservative approach suggested by Reynolds is more appropriate for National Forest management. We suggest a potential home range analysis for the project area which would divide the area into 6 or 7 potential home ranges based the judgment of the project biologist. The existing home range should then be classified into potential goshawk nesting habitat based on the guidance of the Hayward and Escano (1998). An analysis should be completed to assure that sufficient old forest is maintained around each of the three potential nest stands to meet the Reynolds post-fledging requirements. Thus each home range should have at least three suitable post-fledging areas at least 420 acres in size with at least 60% old forest surrounding the potential nest stands. Foraging

habitat should maintain the diversity of conditions that Reynolds et al. (1992) discusses in his management guidelines. That will likely mean a sufficient component of older forest stands along with some stands in younger age classes.

Now let us look at Sampson's short-term viability analysis. He suggests that only 30,147 acres (122 km^2) would be required to support 25 nesting pairs or a net effective population of 110 individual goshawks (includes young and non-breeding adults) which he considers to be the minimum number to maintain a minimum viable population. We have previously discussed several problems with this approach (Mills 2007) and do not agree that the minimum viable population approach has much validity in our current understanding of population viability analysis. This is approximately 1,206 acres of habitat per nesting pair or only 18.3 % of the 6,600 home range size of a successfully nesting female goshawk reported by Moser (2007) or only. Thinking of it another way each bird in Sampson's minimum viable population of 110 individuals would have 274 acres.

Sampson (2006b) says "the spacing of nests at 1.6 km suggests use of an area (hexagon) of 2.2 km^2 ". He then calculates the net effective population size for 50 breeding birds at 110 based on curves by Allendorf and Ryman (2002). He multiplies this number by the 2.2 km^2 home range size and divides by two to account for overlap of home ranges between the sexes. Thus his minimum viable habitat estimate is $2.2 \text{ km}^2 * 110 / 2 = 121 \text{ km}^2$ or 122 km^2 as reported by Sampson (Presumably due to rounding errors).

This creates a serious error in Sampson's "short-term" assumptions regarding the amount of habitat required for a minimum viable population of goshawks. If Sampson had used a more reasonable estimate of home range size (Moser 2007 or Reynolds et al. 1992) his habitat requirements for a minimum viable population would have been much higher. For example, using Moser's 2007 estimate of the size of a successful female goshawk's home range of 6,600 acres or 26.7 km^2 would have yielded the following result ($110 * 26.7 \text{ km}^2 / 2 = 1,468.5 \text{ sq. km}$). Thus the minimum acreage requirement would have been twelve times the estimate calculated by Sampson or 362,872 acres.

The Clear Creek wildlife analysis makes several assumptions regarding maintenance of the goshawk populations on the Nez Perce National Forest based on the short-term viability analysis by Sampson (2006b) and reports of available habitat that have been prepared by Bush and Lundberg (2008). The overall conclusion of that analysis is that because we have several times the amount of habitat required for a minimal viable population in the short-term, there are no population concerns at the Forest Level. All conclusions are therefore based on un-validated habitat proxies and no population monitoring information has been offered to support these conclusions.

We have already shown that the short-term viability analysis has underestimated goshawk habitat needs by 12 fold for the entire region. Examination of the Bush and Lundberg (2008) report also causes us some concerns. Goshawk nesting habitat has been defined differently by three regional groupings (Northern Rocky, Middle Rocky and Southern Rocky). The Clear Creek project and the Nez Perce Forest are in the Middle

Rocky Forest Group, where nesting habitat is limited to stands in the 13-18" DBH size class, 34-71% crown closure and basal areas between 121-253 and drier forest groups (lodgepole pine, ponderosa pine, and Douglas fir). This description of nesting habitat does not match the most appropriate investigations of nesting habitat in Northern Idaho (Moser 2007 and Hayward and Escano 1989) and will tend to eliminate nesting habitat on moister sites, stands of larger diameter and stands of higher crown closure which have all shown to be important characteristics of nesting habitat in this area.

A similar pattern can be seen in the queries for the identification of post-fledging habitat. Habitat is once again defined differently by zone, but this time Middle and Southern Rocky Zones have been collapsed into one group. Thus there are two descriptions of post-fledging habitat. The two groups basically include the same parameters (Trees > 7", Basal Area 115-250, and most tree species except western red cedar) but lower crown closures (<50%) are permitted in the Middle and Rocky Zones. In the Northern Rocky zone crown closures must exceed 70%. We have problems with this estimate of potential post-fledging habitat since it also doesn't agree with the literature and identify the most important component of post-fledging habitat which is older forest. Stands in the 7-13" DBH category likely will not be that important as post-fledging habitat. Moser (2007) suggested that stands in with over 70% crown closure and average DBH of 13" were most important in the post-fledging area. For this reason, we suspect the Bush and Lundberg (2008) queries will tend to overestimate post-fledging habitat.

Finally, we arrive at the foraging habitat estimates which are very broad. The only requirement is that stands have over 40% crown closure and that they be one or two-storied stands. Most tree species except western red cedar are considered acceptable habitat. We believe this query will give very broad estimates of suitable foraging habitat and not necessarily provide the diversity of habitats used by goshawks for foraging. Under the analysis, we have no idea how much of the foraging habitat is composed different structural stages that are important to goshawk foraging. We agree that some diversity is required in goshawk foraging areas, but doubt that home ranges with extensive amounts of young forest will be attractive to the goshawks. With no spatial component the Bush and Lundberg (2008) queries make it impossible to determine if there is a good interspersed of nesting habitat, post-fledging areas and suitable foraging sites.

The Bush and Lundberg (2008) queries are very broad brushed and not spatially explicit. We object to the use of these queries and the Sampson (2006b) short-term viability analysis as a substitute for Forest level monitoring and habitat analysis. The habitat proxies used by Bush and Lundberg (2008) do not match goshawk research that has been done on the Nez Perce/Clearwater forest and are not representative of the most habitat conditions found in the Clear Creek project area. We have pointed out large errors in the short-term viability analysis and the Bush and Lundberg (2008) surveys and the bottom line is that the Forest Service doesn't have any good idea of how goshawk populations are doing on the two Forests.

We believe that a spatially habitat analysis based on the Reynolds et al. (1992) management guidelines, other pertinent scientific literature and monitoring data is required before outside areas can be relied on to make up for losses of goshawk habitat associated with the Clear Creek project. The National Forest Management Act requires that National Forests are to “provide for a diversity of plant and animal communities based on the suitability and capability of the specific land area”. In the past this has been interpreted as “maintaining viable populations of native and desired non-native species at the Forest level” however under the 2012 planning rules this has been modified to maintain suitable habitat at the Forest level. With many large errors and lack of a tie to existing literature, we believe that the current goshawk analysis for the Clear Creek project has not sufficiently addressed project level impacts or cumulative impacts to the goshawk at the Forest level.

The FEIS ignores other important scientific information on goshawk habitat requirements. Clough (2000) noted that in the absence of long-term monitoring data, a very conservative approach to allowing logging activities near active goshawk nest stands should be taken to ensure that goshawk distribution is not greatly altered. This indicates that the full 180-acre nest area management scheme recommended by Reynolds et al. (1992) should be used around any active goshawk nest on the Forest. Removal of any large trees in the 180-acre nesting area would contradict the Reynolds et al. (1992) guidelines.

The Forest Service’s Samson (2006) reports says that 110 breeding individuals (i.e. 55 pairs) are necessary for a viable goshawk population in R1. Attachment 8 is a map showing the results from the 2005 R1 region-wide goshawk survey using their “Woodbridge and Hargis” goshawk monitoring protocol, which is published as a USFS technical report. That 2005 detection map says there were 40 detections in 2005 in Region 1. So the results of this survey essentially show that the population in Region 1 is not viable according to the agency’s own science (only 40 instead of 55). And some of the detections may have been individuals using the same nest, so the number of nests (and therefore number of breeding pairs) could be even lower than 40.

The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3).

XXV. THE PILEATED WOODPECKER HABITAT ANALYSIS IS NOT SUPPORTED BY THE BEST AVAILABLE SCIENCE AND SIGNIFICANTLY UNDERESTIMATES SUITABLE HABITAT AND PROJECT LEVEL IMPACTS

Again we object to the quality of the wildlife analysis for the pileated woodpecker. The analysis does not incorporate the best available science for the species and is not spatially explicit. Field tested management guidelines (Bull and Holthausen 1993) and the latest

information on the effect of logging on the species (Bull et al. 2007) has not been considered. The work by (Bull et al. 2007) represents over 30 years of investigation into the effects of logging on this species and is the longest study on record for the pileated woodpecker and most other species. Ignoring this work in favor of simple stand exam queries is not an approach that relies on the best available science.

Harry Jageman noted:

Concerns for the pileated woodpecker are similar to those that have been previously described for many of the other sensitive wildlife species. Once again the analysis relies on large scale assessments that are not tracked or updated to reflect changed conditions. The analysis utilizes ridiculous estimates of the amount of habitat that would be required to maintain a viable population in the 25 million acre Northern Region. In this case the estimate it is only 90,441 acres. Again estimates of suitable habitat appear to be very low, only 8,160 acres of suitable nesting habitat is said to exist when 16,387 acres of the existing stands are identified in the DEIS vegetation analysis to have average an Average DBH exceeding 21 inches. Pileated woodpeckers are generally known to nest in trees that are larger than 21 inches DBH (McClelland 1999, Bull 1993).

Again the analysis refers to population numbers for the entire State of Idaho (9000 birds), but makes no estimate of how many pileated woodpeckers might be impacted by the project proposal. Again this could be easily estimated based on the average home range size of this species which has been listed at approximately 1,200 acres (Mellen et al. 1992). What are the current habitat conditions in those potential territories and how will the project impact them? Again there are no answers to any of these questions in the DEIS. The analysis just says some impacts will occur and does not display the distribution of those impacts or how it will actually impact existing habitat for the pileated woodpecker.

FOC and AWR noted:

Where would cutting occur in old growth? The DEIS approves improvement cuts but later claims there would be no impact on old growth. What peer-reviewed science do you have that suggests improvement cutting works or is needed that contradicts the agency's own research that shows thinning affects species like pileated woodpeckers (see Bull et al. 1995, PNW, GTR, 353)? What trees will be logged? Will any large grand fir be logged? What about dead snags? How will old growth characteristics be maintained given requirements for removal of dangerous trees like snags for safety reasons? Why was no forest plan amendment approved to log in old growth when the Forest Service, in the past, considered it was necessary to comply with the forest plan and MA 20? We also provided information in our scoping comments about the erroneous assumptions concerning ponderosa pine types in this area and that large fires are not unnatural, as the DEIS seems to suggest. Indeed, these cuts in old growth are justified on an irrational fear of fire.

How is the creation of roads in old growth protection? This would actually negatively affect the stands by creating more edge effect, which is known to harm species such as cavity nesters.

The wildlife habitat and the vegetation sections seem to be inconsistent. Some of the numbers in the chart on page 3-84 don't match the descriptions of vegetation. For example, the VRU tables suggest more acreage of stands of trees 21 inches and greater than is habitat for pileated woodpeckers or goshawks, which are old growth indicator species or for the two bat species, who use these older trees. This problem exists for other species. ...

These problems are not confined to black-backed woodpeckers (or martens), but also include goshawks, pileated woodpeckers, fisher, the two bat species, and the western toad.

In essence, the DEIS fails to look at habitat actually used by the species like fisher, marten, goshawk, black-backed woodpeckers, and pileated woodpeckers. Forest plan monitoring has not been done (or reported) and this may be a reason for the inconsistency with the DEIS analysis of wildlife. Without on-the-ground field work, the agency cannot adequately project impacts to species either on a site-specific or cumulative level.

The FEIS pileated woodpecker analysis suggests there are 8,160 acres of pileated nesting habitat in the project area. This number appears low, given that the vegetation analysis suggests there are 16,135 acres of forest over 21+ inches in moist habitat types preferred by this species. This discrepancy is really hard to understand given the nesting habitat query parameters of >15" DBH, > than 15% canopy closure and all species except lodgepole pine, Englemann spruce and subalpine fir. The FEIS does not suggest that these three species are major project area components and it does not seem that not including them would explain the discrepancy. Are mixed conifer stands being missed or is this primarily due to the lack of stand exam data on approximately 10% of the project area (Table 1)? It would seem some further investigation is in order. Has there been some sort of error in the queries?

Regardless of the amount of available nesting habitat we object to the reliance on stand exam queries to complete the analysis. No cumulative habitat thresholds have been set for habitat loss (Schultz 2010) and we think the analysis fails to answer the "so what" question about how the project will affect the pileated woodpecker. The analysis admits that 22% of the project area is already unsuitable for pileated nesting due to the lack of existing snags that were removed in previous timber harvest (FEIS 3-197). New harvest could potentially remove another 4,156 acres (9.5% of the project area) due to regeneration harvest and another 854 acres (2.0%) due to possible regeneration harvest of commercial thinning stands within the focus areas. This could leave 31.5 to 33.5 percent of the project area unsuitable for pileated nesting for a very long time frame (75-125 years). Foraging habitat will also be lost in the 3,366 acres of commercial thinning units outside of the focus areas and the 331 acres scheduled for improvement harvest.

Again, we believe a more spatially explicit analysis of pileated woodpecker habitat is required. We think that could start by identifying potential or theoretical pileated woodpecker home ranges within the project area. We agree with the home range size of approximately 1005 acres (Bull et al. 1992) utilized in the Sampson (2006a) report. Thus the project area could potentially support approximately 40 nesting pairs of pileated woodpeckers on mesic areas (Table 3). To identify project level impacts we suggest use of habitat management guidelines developed by Bull and Holthausen (1993). These guidelines have been field tested and home range use in the areas where the guidelines were developed have been tracked for over 30 years (Bull et al 2007).

Bull and Holthausen (1993) recommend that approximately 25% of the home range be old growth and 50% be mature forest. They suggested that 50% of the area should have stands with greater than 60% canopy closure and at least 40% should remain unlogged (any type of logging). Follow up work (Bull et al. 2007) found that bird density did not change in 30 years (despite major infestations of spruce budworm) in home ranges meeting these guidelines, unless extensive regeneration harvesting had occurred in the home range. They defined extensive regeneration harvest as 25% of the area, a number which will be exceeded with the implementation of Clear Creek Alternative C. They also examined nesting success and found that birds that successfully produced young had on average 85% of their home range unlogged and 15% unlogged (any type of logging including fuel reductions). Whereas unsuccessful nesters had 62% of the home range unlogged and 38% logged (Bull et al. 2007).

The DEIS ignores many structural habitat components necessary for the pileated woodpecker. USDA Forest Service, 1990 indicates measurements of the following variables are necessary to determine quality and suitability of pileated woodpecker habitat:

- Canopy cover in nesting stands
- Canopy cover in feeding stands
- Number of potential nesting trees >20" dbh per acre
- Number of potential nesting trees >30" dbh per acre
- Average DBH of potential nest trees larger than 20" dbh
- Number of potential feeding sites per acre
- Average diameter of potential feeding sites

This preferred diameter of nesting trees for the pileated woodpecker recognized by R-1 is notable. McClelland and McClelland (1999) found similar results in their study in northwest Montana, with the average nest tree being 73 cm. (almost 29") dbh. The pileated woodpecker's strong preference for trees of rather large diameter is not adequately considered in the FEIS. Effectively, the FEIS provides absolutely no commitments for leaving specific numbers and sizes of largest trees favored by so many wildlife species, resorting instead to vague statements in descriptions of the various silvicultural treatments proposed.

B.R. McClelland has extensively studied the pileated woodpecker habitat needs. To quote a March 12, 1985 letter from B.R. McClelland to Flathead NF Supervisor Edgar B. Brannon:

Co-workers and I now have a record of more than 90 active pileated woodpecker nests and roosts, ...the mean dbh of these trees is 30 inches... A few nests are in trees 20 inches or

even smaller, but the minimum cannot be considered suitable in the long-term. Our only 2 samples of pileateds nesting in trees <20 inches dbh ended in nest failure... At the current time there are many 20 inch or smaller larch, yet few pileateds selected them. Pileateds select old/old growth because old/old growth provides habitat with a higher probability of successful nesting and long term survival. They are “programmed” to make that choice after centuries of evolving with old growth.

McClelland (1977), states:

(The Pileated Woodpecker) is the most sensitive hole nester since it requires old growth larch, ponderosa pine, or black cottonwood for successful nesting. The Pileated can be considered as key to the welfare of most hole-nesting species. If suitable habitat for its perpetuation is provided, most other hole-nesting species will be accommodated.

Pileated Woodpeckers use nest trees with the largest dbh: mean 32.5 inches;

Pileated Woodpeckers use the tallest nest trees: mean 94.6 feet;

The nest tree search image of the Pileated Woodpecker is a western larch, ponderosa pine, or black cottonwood snag with a broken top (status 2), greater than 24 inches dbh, taller than 60 feet (usually much taller), with bark missing on at least the upper half of the snag, heartwood substantially affected by *Fomes laracis* or *Fomes pini* decay, and within an old-growth stand with a basal area of at least 100 sq feet/acre, composed of large dbh classes.

A cluster analysis based on a nine-dimensional ordination of nest tree traits and habitat traits revealed close association between Yellow-bellied Sapsuckers, Mountain Chickadees, and Red-breasted Nuthatches. These three species plus the Pileated Woodpecker and Hairy Woodpecker are relatively grouped by coincident occurrence in old growth. Tree Swallows, Black-capped Chickadees, and Common Flickers are separated from the above five species by their preference for more open areas and their frequent use of small dbh nest trees.

(Most) species found optimum nesting habitat in stands with a major component of old growth, particularly larch. Mean basal area for pileated woodpecker nest sites was 150 square feet per acre. (McClelland, B.R. and others, 1979)

Many large snags are being cut for firewood. Forest managers should limit firewood cutting to snags less than 15 inches in d.b.h. and discourage use of larch, ponderosa pine, and black cottonwood. Closure of logging roads may be necessary to save high-value snags. Logging slash can be made available for wood gatherers.

Clearly, the best available science does not support the contention that pileated woodpeckers will be unaffected by the Clear Creek proposal. Long-term studies (Bull et al. 2007) suggest that the pileated woodpecker is highly sensitive to both regeneration harvest and other activities like commercial thinning and improvement harvest. Fuel treatments on the Starkey Experimental Forest which were similar to activities proposed

in Clear Creek, where shown to reduce reproductive success for pileated woodpeckers significantly (Bull et al. 2007).

We are pleased to see that some monitoring has been completed in the project area for the pileated woodpecker (FEIS-3-196). However, we object to the use of the Samson (2006b) short-term viability analysis and the Bush and Lundberg (2008) habitat estimates as a way to show that pileated woodpeckers are being maintained at the Forest level and that the Clear Creek project will not contribute to cumulative impacts at the Forest level for this species. We mention once again that Sampson's long-term viability analysis (2006a) suggests that the chances of long-term viability are low for the pileated woodpecker. We again raise issues with the short-term viability analysis and its reliance on a minimal viable population (Mills 2007). We again are concerned that the analysis does not "provide for a diversity of plant and animal communities based on the suitability and capability of the specific land area" as required by the National Forest Management Act. Unlike our findings for the goshawk, we do not take issue with the home range size used by Sampson (2006b) in his short-term viability analysis.

We strongly object to the Bush and Lundberg (2008) habitat analysis of suitable foraging and nesting habitat for the pileated woodpecker. This simplistic query of FIA data is not spatially explicit and relies on meaningless definition of pileated woodpecker habitat that is not supported by the available literature (Bull and Holthausen 1993, McClelland and McClelland 1999, Mellen et al. 1992). Nesting habitat is simply defined as a stand with one dead tree per acre over 15 inches DBH and foraging habitat is defined as a stand with one dead tree per acres over 9 inches DBH. This is not a defensible description of pileated woodpecker habitat and makes the analysis pretty much meaningless. One snag per acre does not constitute suitable nesting habitat for this species!

The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3)..

XXVI. THE AMERICAN PINE MARTEN HABITAT ANALYSIS IS NOT SUPPORTED BY THE BEST AVAILABLE SCIENCE AND SIGNIFICANTLY UNDERESTIMATES SUITABLE HABITAT AND PROJECT LEVEL IMPACTS

Harry Jageman noted:

Your stand exam queries appear to have done a better job predicting marten habitat, but the impacts still seem to be low considering the size of Alternatives B, C and D. You regenerate over 2200-4,200 acres of mature stands with Alternatives B, C and D, yet only 800-1200 acres of suitable marten habitat is impacted.

Once again the prediction by Samson (2006) that 17,297 acres would provide enough habitat to meet a minimum viable population estimate appears to be ridiculous. According to your analysis you could maintain the entire Northern Regions marten population within the project area since you supposedly have 17,328 acres of suitable habitat. I also have the same problems with the million acre estimate of suitable habitat from Bush and Lundbergh 2008 report that has been previously discussed for many of the other species.

FOC and AWR noted:

The DEIS references a 2008 report done for the Nez Perce National Forest and a 2006 internal agency document that was not published in a peer-reviewed publication. There are assumptions that fail logic and science, including assumption that very little habitat is needed to maintain species (the 2006 report) across the entire region (for example, see page 3-90 for black-backed woodpeckers). It also seems the broad habitat estimates are different than the ones used in the DEIS and they don't take into account recent logging and fires. For example, the DEIS recognizes 700,000 acres of black-backed woodpecker habitat on the Nez Perce National Forest (about 30 percent of the forest), yet less than 2,400 acres in the project area (about six percent of the project area). Another example is marten, where the amount of mature stands proposed to be clearcut are greater than the amount of habitat lost. It seems there are apples and oranges comparisons when looking at habitat on the larger scale versus on the site-specific scale. These problems are not confined to black-backed woodpeckers (or martens), but also include goshawks, pileated woodpeckers, fisher, the two bat species, and the western toad.

Regarding fisher, the DEIS divides winter and summer habitat. However, even the research cited in the DEIS notes the need for old growth during both winter and summer. Thus, it seems the DEIS underestimates the impacts to fisher. Given the high level of accidental trapping of this species in the region, it is of grave concern. The DEIS does not differentiate between the two what many scientists now consider as separate marten species in North America based upon genetic studies, *Martes americana* and *Martes caurina*. Their ranges tend to meet somewhere in the northwestern Montana and northern Idaho. To what species (or subspecies) do the marten in the forest belong or are they both found here?

In essence, the DEIS fails to look at habitat actually used by the species like fisher, marten, goshawk, black-backed woodpeckers, and pileated woodpeckers. Forest plan monitoring has not been done (or reported) and this may be a reason for the inconsistency with the DEIS analysis of wildlife. Without on-the-ground field work, the agency cannot adequately project impacts to species either on a site-specific or cumulative level.

Again, we object to the inadequacy of the wildlife analysis for this species. The analysis is not spatially specific and fails to recognize more recent literature on the effect that habitat fragmentation on the pine marten. For example, numerous recent studies have

found that the species is particularly vulnerable to habitat fragmentation (Webb and Boyce 2009, Hargis et al. 1999, Moriarty et al. 2011, Potvin et al. 2000). For example, Hargis et al. (1999) reported that “Martens were nearly absent from landscapes having >25% non-forest cover, even though forest connectivity was still present.” Effects seem to be more pronounced in western conifer forests like the project area. In eastern boreal forests where the species is also found, the presence of complex hardwood stands can sometimes help to mitigate the effects of fragmentation (Cheveau et al. 2013).

The FEIS appears to capture the current literature regarding marten in western forests: “optimal habitat is described as mature/old-growth spruce-fir forest” and appears to do a better job of identifying potential habitat in the project area than most of the other FEIS wildlife analyses. The FEIS accurately portrays that “more open areas would provide unsuitable conditions for marten.” Avoidance of openings is well documented in the literature (Potvin et al. 2000, Koehler and Hornocker 1977, Chapin et al. 1998).

However, none this data is displayed spatially and it is unclear how the project will affect fragmentation of the potential habitat. There is also a high probability that the stand exam queries that were done for the project area and the FIA queries that were done for the Bush and Lundberg (2008) analysis have incorrectly identified potential habitat. Stands on low elevation breakland areas will likely not receive much use by the pine marten. The project area queries have likely excluded most of this habitat, by not selecting stands with ponderosa pine or Douglas fir cover types, but some grand fir and cedar stands may have been included. The Bush and Lundberg (2008) queries have not excluded stands with ponderosa pine and Douglas fir covert types.

The Nez Perce/Clearwater National Forest needs to do a better job of identifying fragmentation impacts on the pine marten on the Clear Creek project. We suggest that potential habitat for the pine marten needs to be mapped at the project level. Ultimately, this should also be done for both the Nez Perce and Clearwater Forests. Most pine marten habitat likely occurs above 4000 feet and is associated with spruce/fir forests (Koehler and Hornocker 1997). We think that potential home ranges should then be delineated within the suitable range and that fragmentation effects examined. Home range estimates are highly variable for marten (Burskirk and McDonald 1989, Powell 1994) and no good estimates are available for Idaho in the literature. We suggest using the findings of Bull and Heater (2001) who found that female home ranges averaged 3,500 acres in nearby Northeastern Oregon. They report that home ranges do not overlap significantly in the same sex, but larger male home ranges (6,700 acres) often overlap female home ranges.

Timber harvest should be then limited to actions that do not create more than 25% open habitat in each home range (Hargis et al. 1999). Such an analysis would give a much more scientifically based projection of the impact of the proposed project on marten habitat and more appropriately deal with fragmentation impacts that have been ignored in the current analysis.

We also take issue with the Sampson 2006b assessment of short-term viability and the Bush and Lundberg (2008) assessment of available habitat based on FIA data. Sampson

(2006a) did not complete a long-term assessment for the pine marten or fisher. Sampson (2006b) suggested that 14km² (3,458 acres) would be the minimum amount of habitat to support the minimum viable population of pine martens in the entire Northern Region. This number was based on a publication by Smallwood (1998) for the minimum value of required habitat of a variety of carnivores and was also used for Sampson's fisher analysis.

In the FEIS (page 3-192) it is reported that Sampson (2006b) indicated that 17,297 acres (70 km²) are required to maintain a viable marten population. Perhaps we have an older version of Sampson's report or there has been metric to English conversion error? At any rate this small amount of habitat seems ridiculously low, given Bull and Heater (2001) home range size of 3,500 acres for females and 6,700 acres for males. The 17,287 acres reported in the FEIS would be just enough habitat for 5 females and perhaps 3 males if the FEIS figures are correct, and only one female if the 14 km² from our version of the Sampson (2006b) report is correct.

Again we mention the comments of Mills (2007) about the futility of a minimum viable population approach to viability analysis. We also mention the importance of meeting the requirements of the National Forest Management Act to "provide for a diversity of plant and animal communities based on the suitability and capability of the specific land area".

Finally, we discuss problems with the Bush and Lundberg (2008) FIA query. First and foremost this approach is not spatially explicit and not appropriate for a species that is significantly impacted by forest fragmentation (Webb and Boyce 2009, Hargis et al. 1999, Moriarty et al. 2011, Potvin et al. 2000). Large portions of the habitat identified in this type of analysis could not be available to marten. Second, the approach is not limited to areas preferred by the marten and likely includes a high percentage of low elevation habitat that would not be used. The fisher is likely to play a more dominate role in these lower elevation areas than the marten. Third, no monitoring data is included as part of the analysis which would validate the habitat proxies used in the analysis at both the project and Forest levels. In short, the entire analysis does not do a credible job of using the best available science to assure that the marten populations are maintained as required by the National Forest Management Act.

The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3).

XXVII. FLAMMULATED OWL, PYGMY NUTHATCH, RINGNECK SNAKE AND MOUNTAIN QUAIL

Harry Jageman noted in his comments under the heading *Flammulated Owl, Pygmy Nuthatch, Ringneck Snake and Mountain Quail*, “I agree that all of these species would find limited habitat in the analysis area and that the areas of primary importance occur on project area breaklands (VRU 3). The comment continued with concern about the extent of logging or treatments and the need to retain larger stands of ponderosa Douglas fir. We agree that these four species would find limited habitat in the project area and that most of the potential habitat would be confined to VRU 3. We also agree with the general habitat descriptions that are discussed in the FEIS. Habitat predictions from stand exam queries for the flammulated owl and pygmy nuthatch do not seem as out of synch with the vegetation analysis as they do for many of the other species. For example, the Vegetation Analysis suggests there are approximately 747 acres of forest in size classes which exceed 9 inches DBH in VRU 3 and the FEIS suggests there are 779 acres of suitable habitat for flammulated owls and 960 suitable acres for the pygmy nuthatch. Both species are known to be associated with older ponderosa pine and Douglas fir forests. Habitat for the ringneck snake is considered to be all of VRU 3 in the FEIS, which also seems reasonable. However, the queries for all four of these species also likely suffer from the fact that there is no data for 10% of the project area (Table 1).

The mountain quail habitat analysis seems to follow the same pattern we see for many other species with only 187 acres of suitable habitat being predicted. It appears that only non-forested habitats have been selected for this species, since 187 acres is very close to the 182 acre amount of non-forested habitat in VRU 3 according to the vegetation analysis. We submit that the stand exam queries do not follow the FEIS habitat discussion that suggests use forests in younger age classes can provide habitat for the mountain quail. There are currently 970 acres in stands less than 5 inches DBH according to the vegetation analysis and 878 stands of unknown size class which could be utilized by the mountain quail.

Our real objection to the analysis is the level of regeneration harvest that is being proposed for the flammulated owl and pygmy nuthatch habitat. Both species are associated with large diameter Ponderosa Pine and Douglas fir. The analysis for the flammulated owl suggests that 27% (210 acres) of the existing flammulated owl habitat would be regenerated under Alternative C. This seems to be a terribly high amount of the existing habitat given its relatively low availability in the project area. We also don't understand how the 331 acres of improvement harvest will only account for 13% (101 acres) of the suitable habitat for this species. Our understanding is that the improvement harvest will be conducted in older ponderosa pine and Douglas fir stands that are the preferred habitat for both the flammulated owl and pygmy nuthatch.

The pygmy nuthatch analysis doesn't seem to agree with the flammulated owl analysis. The only difference for pygmy nuthatch habitat query is that it includes stands between 9 and 12 inches DBH and stands that have less than 35% crown closure (FEIS 3-160). All stands identified as flammulated owl habitat should therefore be pygmy nuthatch habitat.

Yet, the analysis suggests only 77 acres of pygmy nuthatch habitat would be harvested by regeneration harvest in Alternative C. This is 133 acres less than the flammulated owl analysis, which suggests 210 acres will be harvested with regeneration harvests. If anything, more acres should be shown as harvested in pygmy nuthatch habitat since it includes all of the same acres and an additional 161 acres of stands with more open canopies and smaller sized trees. Improvement harvest is expected to impact 37 acres in the pygmy nuthatch analysis, which again is 64 acres less than the flammulated owl analysis. Shouldn't all of the improvement harvest areas be flammulated owl and pygmy nuthatch habitat?

We also don't understand how the entire project area can be the cumulative impact area for these four species. Most of the project area is in moist habitat types, which would never support these species. Nearby lower elevation private lands and other breakland areas along the Clearwater and Selway Rivers are likely more important for these species. Conditions of habitats on these lands would have better set the context for the importance of habitats in the Clear Creek project area. In fact, most of the references of observations of these species in the FEIS are associated nearby private lands and other low elevation areas. Thus we object to using the project area as the cumulative effects area and think a more appropriate cumulative effects area needs to be designated for these species.

We have already discussed our concerns with the Sampson (2006a, 2006b) report for many of the other species of concern. Again we point out the long-term viability conclusion for the flammulated owl was "low". Problems with the short-term viability analysis are similar to those previously described for other species. The habitat requirements for a minimum viable population level again appear to be very low and are based on a territory size of 11.1 ha (27 acres - Linkhart et al. 1998). The Sampson report estimates that only 19 km² or 4,693 acres would be needed to maintain a minimum viable population for the entire region. Barnes (2007) estimated the density of flammulated owls at one singing male per 133ha (329 acres) in suitable habitat in his study area in the Boise National Forest. This would suggest that over 12 times the amount of habitat suggested by Sampson (2006b) would be required and the analysis would still have the same problems detailed by Mills (2007).

Sampson (2006b) results are then compared to habitat estimates by Bush and Lundberg (2008) who use habitat estimates based on a minimum tree DBH of 12 inches. In a similar national analysis (Nelson et al. 2009) also used a minimum DBH of 30 cm (11.8 inches) to identify potential nesting habitat, but they point out that this is the "minimum size of trees recorded as nesting sites, but the mean DBH of these nesting trees was about 50 cm (19.7 inches). Constraining our estimates to trees at least 50 cm would have reduced both the geographic extent and the total area of our estimates of habitat abundance. Therefore, our estimates are as potential habitat abundance, which includes habitat of low quality". This also suggests the Bush and Lundberg (2008) report includes a substantial amount of low quality habitat. Nelson et al. (2009) estimate that there was a 28% decline in large diameter Ponderosa and Jeffrey Pine over 50 cm between 1953 and 2007 in the United States. We think such losses and the continued loss of habitat through projects such as Clear Creek spell trouble for this species and agree

with the conclusions of Sampson (2006a) that long-term viability for this species is “low”.

The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3).

XXVIII. LACK OF CONCERN FOR PROTECTING MOOSE HABITAT AND FAILURE TO CONSIDER FOREST PLAN STANDARDS THAT SLOPES OVER 35% ARE UNSUITABLE FOR TIMBER MANAGEMENT IN MA-21.

Harry Jageman noted the need “to meet the Peek et al. 1997 guidelines” in any chosen alternative. Previous studies of moose habitat on the Nez Perce National Forest have documented the importance of dense understories of Pacific yew stands under old-growth grand fir communities (Pierce and Peek 1984). The importance of these habitats has been documented in the Forest Plan with a special management area (MA-21) and local habitat management guidelines that have been developed based on that past research (Peek et al. 1987).

These guidelines are the best available science regarding this management indicator species and have been prepared by one of the most preeminent moose biologists in North America (Dr. James Peek). Co-authors on the paper are graduate student John Pierce (Currently Chief Wildlife Research Scientist for the Washington Department of Fish and Wildlife), Dean Graham (Former Nez Perce National Forest Biologist) and Dan Davis (Former Clearwater National Forest Biologist). The guidelines suggest that no more than 45% of MA 21 should be in age classes younger than 90 years and that no more than 14% should be logged in any 30-year period.

Management area direction for MA-21 has a standard that only lands under 35% slope are suitable for timber harvest and that only 5% of the **suitable** acreage can be harvested each decade. Suitable lands (those under 35% slope) are to be managed on a 210-year rotation with no more than 5% of stands open to harvest logged per decade. Harvested stands are to be managed to maintain 50% of the live Pacific yew component. Patch size should be no larger than 20 acres and 5 to 10 acres is preferred.

It seems clear, comparing the Forest Plan Management Area map with the selected alternative, that patch size will be exceeded. Specifically, this would occur in T 31 N R6E Sec. 28 and in T 31N R5E section 35.

The allegation that the 210-year rotation age with the maximum 5% per decade figure and the Peek et al. guidelines are being met cannot be deduced by the numbers in the

FEIS. The figure of 3,686 acres of MA 21 and only 2,700 acres of suitable winter range (77%) due to 835 acres being logged (younger than 90 years old, 23%) doesn't add up. 2700 plus 835 equals 3,535 acres, not 3,686 acres. What has happened to the additional 151 acres of MA 21? If it has been logged since 1982 and is no longer suitable, then the 14% ceiling in Peek et al is met now. Additional logging of 161 acres would up the level to 19%.

The FEIS does not list how much of MA-21 is under 35% slope in the project area and therefore appears to make the 5% calculation on the entire 3,686 acres in MA-21. Unless all slopes are less than 35%, this calculation is in error. According to the FEIS (3-205), 835 acres (23% of the total acreage in MA-21) is less than 90 years of age and 388 acres (11% of the total area) has been logged in the last 30 years. Thus conditions in MA 21 currently meet the Peek et al. (1987) guidelines, but it is unclear if the Forest Plan standards are being met since the acreage of slopes over 35% is not reported. According to the FEIS Forest Plan standards are being met, but in order for this to be true all project acreage in MA-21 would need to be under 35% slope. The Nez Perce / Clearwater National Forest has not reported the percentage of MA-21 under 35% slope and suitable for timber management in the FEIS.

The Nez Perce/Clearwater National Forest has chosen to forgo the advice of the Peek et al. 1987 guidelines and regenerate another 161 acres of mature/old growth grand fir stands in MA 21. According to the analysis this will bring the percent harvest up to 15% or 1% above the Peek et al. 1987 guidelines. When asked about this in the public comments (Appendix L-92) the Forest's response was "Thanks for the opinion". Once again demonstrating how the Forest Service has been completely unresponsive to any public input or to the best available science.

The Forest also plans to harvest 332 acres (9%) of MA-21 with commercial thinning prescriptions and pre-commercially thin 283 acres (8% of MA-21). Both activities, which would remove most of the grand fir and thus preclude development of the target stand in this management area, which is old growth grand fir with a well-developed Pacific yew understory. The Forest Service then rationalizes this action by claiming the stands have little Pacific yew due to past management actions.

This is a classic case of "shifting baseline syndrome" described Pauly 1995 and Schultz 2012. Under this syndrome the agency assumes the environmental conditions they see today are the baseline and they ignore a decline in resource conditions that have occurred over time. Schultz 2012 states "This can be problematic when a resource has already sustained significant impacts; future actions may be viewed as having minor impacts even when they may exacerbate already significant impacts." In MA 21, all management activities should be designed to move stands back toward the target condition. Please drop commercial thinning and pre-commercial activities that do not move stands toward the old growth grand fir condition described for this management area.

We also believe that Peek et al. 1987 guidelines should be considered on moose winter range outside of MA-21. The FEIS suggests there are 8,156 of moose winter habitat outside of MA-21, but makes no assessment of the existing condition of these areas and if the Peek et al. 1987 guidelines will be achieved in these areas. It is reported that Alternative C will harvest 345 acres (4%) of the area with regeneration harvest and 581 acres (7%) with commercial thinning in this area. There will also be 283 acres (3%) of pre-commercial thinning. We object to the fact that application of the Peek et al. (1987) guidelines was not considered for winter range areas outside of MA-21. The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3).
2. Apply the Peek et al Guidelines to all moose range and adjust the units accordingly.

XXIX. FAILURE TO USE THE MOST RECENT VERSION OF THE ELK HABITAT MANAGEMENT GUIDELINES AND THUS THE BEST AVAILABLE SCIENCE

FOC and AWR noted:

None of the alternatives meet the elk security recommendations for the Clear Creek elk analysis area. How does this comport with the forest plan? Why wasn't an alternative developed that met this standard?

Also regarding elk, what protocol was used? Was the latest version of the elk habitat guidelines used in the analysis? If not, why not? Does the agency believe it needs to amend the forest plan to use the latest scientific protocol in this instance? If so, why wasn't an amendment proposed, at least for this project area?

Harry Jageman noted:

Why aren't the latest elk habitat effectiveness guidelines being utilized in the analysis? The guidelines were updated in 1997 by Idaho Fish and Game, Forest Service and Tribal biologists to include the latest research and are considered an improvement over the 1994 version which the Forest Service utilized for the DEIS. Please update the analysis to include the best available science which in this case is the 1997 version of the guidelines.

On page 3-125 of the analysis it is stated that the Clear Creek 3 EAA "is not likely to ever meet security recommendations due to the number of open roads that occur throughout it." Why doesn't the Forest Service consider closing some of these roads to meet the recommended security level of at least 30%?

The large amount of burning and cutting proposed for alternatives B, C and D will create a boom or bust situation for elk. The new cuts and prescribed burn will create an overabundance of new forage for a short time (20-30 years), but when the stands grow up that abundance will be lost. I believe a more moderate proposal would have less impact on elk over the long run and preserve future opportunities to create new forage areas 20 to 30 years down the road.

We object to the use of the 1994 version of the North Idaho Elk guidelines and believe the analysis should have been completed the latest 1997 version of the North Idaho Elk guidelines (Servheen 1997). We commented that the Forest Service was not using the latest 1997 version of the North Idaho Elk guidelines. In the past the Forest Service has used the older 1994 version of the guidelines (Clearwater Travel Plan) erroneously claiming that they do not need to evaluate motorized vehicle use along trails. It was made clear in the 1997 update of the guidelines that motorized use associated with trails was also an important factor that can affect elk habitat potential.

The Forest's response to our comment (Appendix L-83) was that the 1994 guidelines were required in the Forest Plan. We see no such language in the Forest Plan only the statement on page II-18 of the plan that states "Use "Guidelines for Evaluating and Managing Summer Elk Habitat in Northern Idaho" to manage for and to assess the attainment of summer elk habitat objectives in project evaluations (see Appendix B of the Forest Plan). Appendix B only states that this "This 37 page document is not reproduced here. Hardcopies are available in the Forest Plan and from your wildlife biologist."

The 1997 version is the latest version of these guidelines and the accepted method at this time. How can the 1994 elk guidelines be required when the Forest Plan was adopted in 1987 and the 1994 version wasn't even written at the time? Please update the analysis to use the latest version of the North Idaho guidelines. We also object to the fact that no response was given to our suggestion of using a Forest Plan amendment to incorporate the latest scientific protocol. Regardless, the 1997 Guidelines are the best available science.

The FEIS states that the Clear Creek 3 Elk Analysis Area is currently at 16% and that it will be reduced another 3% as a result of the implementation of Alternative C. The Forest Service acknowledges (FEIS 3-203) that unauthorized motorized use is occurring in the EAA, but still concludes that summer habitat effectiveness will be 53% after implementation of Alternative C. Given the known unauthorized use and lack elk security in this elk unit, it is hard to understand how the unit can still meet the elk habitat effectiveness of 53%. Unauthorized use is a cumulative impact that the Forest Service should have considered in the analysis. It is also unclear why more open roads can't be closed to improve elk security. The Forest only states that there is "no standard for elk security" and that it is not going to close roads in Clear Creek Three EAA. This is hardly a proactive position for an agency that is supposedly concerned about elk and other wildlife species.

Further, the FEIS does not demonstrate how the project meets requirements in the Forest Plan for elk habitat effectiveness. (see pages II-18 and 19 and management area direction such as III-44). For example, an area at 16% is not meeting the requirements of the forest plan in the two largest management areas in the project area MAs 15 and 16 (see Forest Plan pages III-44 and III-46).

The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

REMEDY:

1. Prepare a supplemental EIS that complies with NEPA and NFMA (see for example 40 CFR 1502.24 and 36 CFR 219.3)..
2. Drop all units where Elk Habitat effectiveness is not meeting Forest Plan standards and goals for both forest-wide and a management area basis.

XXX. FLAWED OLD GROWTH FOREST PLAN AMENDMENT AND PROCESS.

The FEIS does not fully analyze an alternative that would analyze how well project objectives could be achieved without implementing an old growth forest plan amendment, for comparison to other action alternatives. And the expressed purpose and need for the amendment is not adequately articulated and misrepresents agency motivations.

Comments on the DEIS included those by Jageman:

Why is this amendment limited to the Clear Creek Integrated Restoration Project? If the proposal is appropriate for Clear Creek it should be appropriate for the remainder of the Forest. As the document which provides guidance for ongoing site specific projects, the Forest Plan should not be amended at the project level for every site specific conflict that comes up.

There appears to be an erroneous conclusion regarding the Green et al. 1992 paper which was never intended to describe definitions of old growth types. The numbers were intended to be minimum screening criteria for possible old growth stands from the timber stand data base. According to the Green et al. 1992 the final determination of old growth status was to be made by a qualified ecologist or wildlife biologist. Strict reliance on data base queries from the timber stand database has been shown to give unreliable results in past court cases (Iron Honey Timber Sale, Idaho Panhandle National Forest – 9th U.S. Circuit Court of Appeals in San Francisco, 2004) and is no substitute for field investigation by qualified professionals.

There is no need to make this amendment to the Forest Plan as the Green et al. 1992 paper is not in conflict with any existing Forest Plan direction. The paper helps biologists and ecologists make determinations on old growth designations but it was never intended to be a substitute for the professional opinions of qualified ecologists and biologists.

Comments on the DEIS included those by FOC:

Green et al. was not designed to replace either a forest plan definition or field work. It was designed as a screening protocol to aid in the identification of old growth stands. Why amend the forest plan here and not everywhere on the forest? This creates a serious policy problem.

Why was no forest plan amendment approved to log in old growth when the Forest Service, in the past, considered it was necessary to comply with the forest plan and MA 20?

Comments on the DEIS included those by FOC:

We also provided information in our scoping comments about the erroneous assumptions concerning ponderosa pine types in this area and that large fires are not unnatural, as the DEIS seems to suggest. Indeed, these cuts in old growth are justified on an irrational fear of fire.

Comments on the DEIS included those by the Nez Perce Tribe (Marlene Trumbo):

The Tribe notes that the Forest's proposal to amend the Nez Perce Forest Plan Appendix N definition of old growth meets neither the Purpose of nor the Need for Action (Section 1.3). Rather, this amendment simply facilitates, administratively, the implementation of the Project. The Tribe further notes that this proposed amendment does not appear in Chapter 1 of the DEIS ("Purpose of and Need for Action"). An evaluation of the direct, indirect, and cumulative impacts of this amendment does not appear in Appendix D or elsewhere in the DEIS. Amendment of the definition of old growth as proposed would make available additional areas for treatment which would otherwise be precluded from management under this proposal. The Tribe recommends that this and other desired amendments to the Forest Plan be separated from this Project and evaluated within a separate NEPA framework.

The Forest Service ignored most of the substance of those comments. The only response that added anything to the dialogue was: "Until a new Forest Plan is established, this issue will be dealt with on a site-specific, project NEPA analysis."

FEIS Appendix D (Proposed Site-Specific Forest Plan Amendment—Old Growth) says that:

The purpose of this amendment is to replace the Forest Plan Appendix N definitions of old growth with the definitions found in Old Growth Forest Types of the Northern Region (Green, et al., 1992, errata corrected 02/05, 12/07, 10/08, 12/11).

However, the FEIS does not clearly and unambiguously disclose **what part** of the Forest Plan Appendix N definitions of old growth are being deleted or replaced, in violation of NEPA. By including in FEIS Appendix D Table 1, entitled "Northern Idaho Zone Old Growth Type Characteristics (2005 errata edit)" it appears that the criteria for determining if a stand is old growth or not is being changed. Again, the language from Forest Plan Appendix N that is being "replaced" is not identified. It appears that, as with the soils forest plan amendment, confusion and obfuscation is a part of the Forest Service's agenda.

FEIS Appendix D also states, “The Green et al. definitions are regarded as the “best available science” for the classification of old growth at the site-specific level.” And the FEIS Appendix D goes on:

Adopting the definitions for old growth found in Green et al. (1992) that define successional stages, stratification by habitat types, and other site conditions would help refine our interpretation of the old growth characteristics described in Appendix N of the Forest Plan.

So the Forest Service says what they are “adopting” but not what they are divorcing themselves from. What about the Forest Plan Appendix N definitions of old growth are so offensive and unscientific to the Forest Service that they need to be replaced? What about the current forest plan left the agency in need of “help” to “refine (their) interpretation ...of the Forest Plan”? The FEIS doesn’t say, in violation of NEPA.

And the FEIS Appendix D goes on:

Additionally, adoption of this amendment would ensure consistent terminology and analysis. Old growth determination is done through data collection in accordance with Region One stand exam protocols that correlate to the definitions found in Green et al (1992).

So is this really about consistent terminology? If so, it would be a good idea to explain what terminology is inconsistent, that needs to be fixed. But the FEIS doesn’t explain, in violation of NEPA. And what are those “Region One stand exam protocols that correlate to the definitions found in Green et al.?” The FEIS doesn’t cite them, nor list them in its References, in violation of NEPA.

The Forest Service has not properly identified a need to change the Forest Plan in regards to old growth, which violates the 2012 NFMA Planning Rule at 36 CFR § 219.13(b)(1). The FEIS also fails to properly document how the best available scientific information was used to in the preparation of the Amendment, in violation of the Planning Rule at 36 CFR § 219.14.

Project file document OGAmendment.docx states, “The process in the Forest Service Manual 1926.51 was used to determine if this proposed amendment is significant.” It says that “Changes to the Land Management Plan That are Not Significant” include “Minor changes in standards and guidelines.”

The Forest Plan Wildlife and Fish Standard 7 requires the Forest Service to “Provide management for minimum viable populations of old-growth and snag-dependent species by **adhering to the standards stated in Appendix N.**” (Emphasis added.) So the Forest Service is changing some Forest Plan Standards, without disclosing that fact, and considers this and “insignificant” in violation of NEPA. But that same document states, “This amendment would only apply to the Clear Creek project. **All Forest Plan wildlife standards and guidelines would apply to this project.**” (Emphasis added.) If that’s true, then Forest Plan Appendix N standards weren’t changed after all. Forest Plan Appendix N includes the following, under **Old Growth Management Standards**:

Old-growth stand refers to a stand of timber that, generally, meets the following criteria:

1. At least 15 trees per acre > 21 inches diameter at breast height (DBH). Providing trees of this size in the lodgepole pine and sub-alpine fir stands may not be possible.
2. Two or more canopy layers.
3. At least .5 snags per acre > 21 inches DBH and at least 40 feet tall.
4. Signs of rot and decadence present.
5. Overstory canopy closure of 10-40 percent; understory canopy closure of at least 40 percent; total canopy closure at least 70 percent.
6. Logs on the ground.

If the old-growth Forest Plan Appendix N standards # 1 – 6 listed above are mere “criteria” for survey methods that the Forest Service need not follow, then why does the agency see a need for a Forest Plan Amendment? If on the other hand the Forest Service accepts the plain meaning of Forest Plan Appendix N, and is really is eliminating or replacing **standards**, the FEIS doesn’t say so, and it fails to disclose the full implications of the change for the project area and beyond, in violation of NEPA and NFMA.

And “beyond” is of great concern here—the Nez Perce National Forest has been establishing a pattern for projects to do the same. The following “project-specific” amendments to allow logging (supposedly to “improve”) old-growth were made on these specific timber sales:

- ▲ Amendment 17 (Scott Fire Salvage)
- ▲ Amendment 22 (Berg Tiber Sale)
- ▲ Amendment 25 (Middle Fork Salvage)
- ▲ Amendment 29 (Meadow Face Timber Sale)
- ▲ Amendment 32 (Clean Slate)

Are we really to believe—as the Forest Service implies—that its survey methodology will revert back to surveying old growth using the current Forest Plan old-growth criteria in future projects? No, because the FEIS says that the Forest Service considers Green et al. to be “best available science.” As their response to comments indicates, “Until a new Forest Plan is established, this issue will be dealt with on a site-specific, project NEPA analysis.” While avoiding the required cumulative effects and forest-wide analyses, in violation of NEPA and NFMA.

Project file document OGAmendment.docx called this a “Proposed Site-Specific Forest Plan Amendment – Appendix N Old Growth Standard” (emphasis added). It states, “Forest Plan Appendix N Old Growth Standard (Appendix N-1) would be amended with a site-specific Forest Plan Amendment for the Clear Creek project area on the Moose Creek Ranger District.” (Emphasis added.) It goes on:

The Nez Perce National Forest **old growth standard (Forest Plan Appendix N)** applies to lands in the Clear Creek project area. The Appendix N old growth **standard** currently states:

“Old-growth stand refers to a stand of timber that, generally, meets the following criteria:

1. At least 15 trees per acre greater than or equal to 21 inches diameter at breast height (DBH). Providing trees of this size in the lodgepole pine and sub-alpine fir stands may not be possible.
2. Two or more canopy layers.

3. At least .5 snags per acre greater than or equal to 21 inches DBH and at least 40 feet tall.
4. Signs of rot and decadence present.
5. Overstory canopy closure of 10-40 percent; understory canopy closure of at least 40 percent; total canopy closure at least 70 percent.
6. Logs on the ground.”

(Emphasis added.) It also states, “The proposed amendment, specific to the Clear Creek project area adopts the **minimum characteristics** for each old growth type as described in ‘*Old-growth Forest Types of the Northern Region*’ (Green et al 1992 as amended).” (Emphasis added.)

So what are these “minimum characteristics”? According to the FEIS Appendix D Table 1, there are only three:

- MINIMUM AGE OF LARGE TREES
- MINIMUM NUMBER TPA/DBH
- MINIMUM BASAL AREA (FT²/AC).

So, based on the agency thinking reflected in this earlier draft of the amendment, what this Old Growth Amendment attempts to rip out of the Forest Plan standard requirements defining old growth is everything to do with canopy layers, the presence of snags, logs on the ground, other decadence—which are essential characteristics of old growth! **Ironically, these defining characteristics are even acknowledged by Green et al., 1992:**

Old growth forests encompass the late stages of stand development and are distinguished by old trees and related structural attributes. These attributes, such as tree size, canopy layers, snags, and down trees generally define forests that are in and old growth condition.

Definition

Old growth forests are ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include tree size, accumulations of large dead woody material, number of canopy layers, species composition, and ecosystem function.

(O)ld growth is typically distinguished from younger growth by several of the following attributes:

1. Large trees for species and site.
2. Wide variation in tree sizes and spacing.
3. Accumulations of large-size dead standing and fallen trees that are high relative to earlier stages.
4. Decadence in the form of broken or deformed tops or bole and root decay.
5. Multiple canopy layers
6. Canopy gaps and understory patchiness.

Green et al., 1992 also recognize that “Rates of change in composition and structure are slow relative to younger forests.” Logging in old growth, as proposed, would not be anything but slow rate of change.

Project file document 111017WildlifeClearCreekNFMAComments.docx acknowledges:

Decadence is part of the forest. If WL with mistletoe are a problem, keep them and kill them with the burn or girdle them. There are VERY valuable, VERY limited on this landscape...even if dead.

Green et al. 1992 (and corrected versions) arrived after the Forest Plan was adopted. In preparing and adopting these old growth guidelines, the Forest Service did not use an independent scientific peer review process, as discussed by Yanishevsky, 1994:

As a result of Washington Office directives, Region 1 established an Old-Growth Committee. In April 1992, Region 1 issued a document entitled “Old-Growth Forest Types of the Northern Region,” which presented Old-Growth Screening Criteria for specific zones on Western Montana, Eastern Montana, and North Idaho (U.S.D.A. Forest Service 1992). This was an attempt to standardize criteria for classifying the variety of old-growth types across the Region. ...The committee, however, executed this task without the benefit of outside scientific peer review or public input, either during or after the process (Yanishevsky 1990, Shultz 1992b). Moreover, the methodology used by the committee was unscientific and did not even include gathering field data to verify the characteristics of old-growth stands as a basis for the definition (*id.*). A former member of the Region 1 Old-Growth Committee described a “definition process” that relied heavily upon the Committee members’ pre-conceived notions of the quantifiable characteristics of old-growth forests (Schultz 1992b).

The old-growth definition in its present state, without field verification of assumptions, and without addressing the issue of quality, is inadequate to scientifically describe, define, delineate, or inventory old-growth ecosystems.

(*id.*) Not only did the Committee fail to obtain new field data on old-growth forest characteristics, it failed even to use existing field data on old-growth definition and classification previously collected for Region 1 (Pfister 1987). Quality of old growth was not addressed during the definition process. The Committee did not take into account the legacy of logging that has already destroyed much of the best old growth. This approach skewed the characteristics that describe old-growth forests toward poorer remaining examples. ...It’s premature for the Forest Service to base management decisions with long-term environmental effects on its Region 1 old-growth criteria, until these criteria are validated by the larger scientific community.

The FEIS states, “Verified old growth is defined by Green et al. (1992) in Old-Growth Forest Types of the Northern Region. Table 3-26 and Figure 3-7 show the verified old growth in each OGAA. The data derive from 2010, 2011, and 2012 stand exams, and field validation.” So the Forest Service in 2010-2012, during the old growth verification surveys, had already decided that Green et al. (1992) criteria would replace the Forest Plan criteria. So now it’s a mere “administrative action” to wave the wand, disappear the Forest Plan Appendix N criteria that were ignored during the 2010-2012 old-growth verification surveys, and render survey methodology that was inconsistent with the Forest Plan—consistent? Brilliant!

We now cite from other project file documents to look for more clues as to what's actually going on from 111005ClearCreekProjectDevelopmentMattMichelle.docx:

We looked at recent (2011) stand exams to identify old growth habitats. We reviewed data on about 230 examined stands. About 105 stands qualified as old growth according to the Nez Perce Forest Plan definition (15 tpa >21" dbh). These were identified on the Clear Creek Project Area map. Then we applied the age criteria included in the Green et al. old growth definition. Some of the stands dropped out (about 30%) because they were younger than 150 years old. Some stands were within 10 years of meeting the 150 year criteria.

Old Growth Definition: FP and/or Green et al. We talked about a site-specific Forest Plan amendment to adopt Green et al. That allows some of the young (under 150 years) large tree habitats to be harvested. The Forest Plan references 160 years in the DFC for 1937 (page II-14) and 150+ in the MA 20 description (page III-56). Using 160+ may make it more difficult to show we have the necessary 10% forest-wide. No Forest Plan amendment would be needed if we are not harvesting in MA 20...essentially comes down to the difference between MA 20 and old growth habitat (in any MA).

Using 160+ may make it more difficult to show we have the necessary 10% forest-wide. No Forest Plan amendment would be needed if we are not harvesting in MA 20...essentially comes down to the difference between MA 20 and old growth habitat (in any MA).

So the Forest Service admits that using its Forest Plan old-growth criteria "may make it more difficult to show we have the necessary 10% forest-wide." In reality, the old-growth analysis for the Clear Creek project illuminates far more serious problems with the forestwide old-growth inventory. Stands "dropped out" based upon the recent (2011) stand exams because that 1980s-era inventory—still making up a large portion of the current forestwide inventory—is old, inaccurate, and out-of-date. Since the data for this project are likely representative of the forestwide situation, the Forest Service cannot now show consistency with its forestwide 10% standard.

What this all means that the old growth in the Forest has been logged to a level that violates the Forest Plan. So what to do? Change the definition so that old growth under the current forest plan criteria can be logged, regardless of forest plan standards! Project file document 110929ClearCreekIDTMeetingPrep.docx reads:

Recommendations:

Retain 10-15 green tpa >21" where they exit (sic), retain all 21+ if under 10 tpa, retain snags, retain green tree replacements to compensate for logging/burning loss.

Develop a landscape OG strategy

Stands of forest featuring 10-15 trees/acre > 21" diameter potentially are old growth. If not, they almost certainly meet the Forest Plan definition of "replacement" old growth, which the Forest Plan envisioned as part of the long-term strategy to continuously maintain 10%, as current old-growth stands lose their character over time to natural processes such as fire. The FEIS states, "Old growth may be treated with improvement harvest to maintain or improve the vigor/resiliency of preferred trees. Improvement harvest in old growth would not change old-

growth status per Green et al. (1992 as amended) old growth criteria.” The Forest Service’s strategy has become—log them and retain enough “minimum characteristics” so they still qualify under Green et al., 1992 (corrected).

Project file document “Mike Ward DRAFT Large Tree Retention Strategy.docx” is revealing:

In stands primarily consisting of “larger” trees the general strategy will be to retain at least XX trees per acre over 21 inches in diameter. Harvest will target smaller diameter trees, ladder fuels and shade tolerant spp. Need to define larger and smaller even if it is broadly set at a diameter limit set at a size beyond what the mill can handle and then be more specific on a stand basis. “Larger” could be 40+” trees and “smaller” could mean <40”. “Larger could be 18-21” and smaller could be <21”.

The FEIS does not describe the “improvement harvest” in terms of any strict diameter limit for trees to be logged. Comments on the DEIS by Harry Jageman include:

There needs to be a better description of the old forest improvement cuts described on page 2-7, item 4. ...Will any of the large diameter trees be removed including large diameter grand fir and what will happen to dead snags?

The language contains so much wiggle room that some of the largest, old trees could be logged—even in old growth.

Also consistent with the Forest Service’s shifty old-growth logging agenda is another important difference between the Forest Plan Appendix N standards and the Green et al. criteria. The Forest Plan Appendix N standards require “(a)t least 15 trees per acre greater than or equal to 21 inches diameter at breast height (DBH).” For every forest types in the Green et al. criteria (FEIS Appendix D Table 1) the required minimum number of trees/acre is less, or the required minimum diameter of large trees is lower—or both. Without disclosure or analysis, the Forest Service is attempting to pass off this change as “insignificant.”

To be sure, there are problems with Forest Plan Appendix N standards that ought to be dealt with by a forest plan amendment. But the problems are with the very foundation of the quantitative habitat standard, not necessarily the stand-level attributes. Forest Plan Appendix N standards state:

Minimum Requirements for Amount and Distribution of Old Growth. Current information indicates that, in order to maintain a viable population of old-growth-dependent species, it is necessary to maintain 10 percent of the total forested acres as old growth with no less than 5 percent of the forested acres maintained as old growth within each prescription watershed or combination of watersheds totalling 5,000 to 10,000 acres.

There is no scientific basis for the “Current information” the Forest Plan is referring to. On the other hand, much scientific information indicates that 10% old growth forestwide is outside the range of reference conditions. For example, in Appendix G, the FEIS states:

The Nez Perce Clearwater Forest Plan Revision, Planning Set of Documents (2010) and the Analysis of the Management Situation (2003) summarize the following needs to maintain terrestrial sustainability and desired conditions.

▲ Increase the amount of ...old growth forests;

▲ Increase patch size in the large size class and also old growth, decreasing fragmentation of these forests;

FOC/AWR comments stated:

The patch size and opening sizes are of great concern. There are some huge blocks of regeneration logging (clearcutting), some of them a few hundred acres in size. ...What about the transition between old growth and clearcuts? How does this kind of contiguity, which occurs in some areas, affect the effectiveness of old growth habitat?

The question about the effectiveness of the old growth newly impacted by adjacent “regeneration” logging was not answered. And Harry Jageman commented on the fact that the project would decrease—instead of increase—the patch size of old forests:

The discussion on patch size (page 3-74 and 3-75) is very misleading. The implication given to the reader is that patch sizes for all successional stages are larger after implementation of Alternatives B, C and D. In reality, “**average**” patch size only increases because several small patches of older forest are harvested from the existing landscape. There is no real change in size of the largest patches and the only real change is that stand initiation patches are now bigger and there is less old forest because the small patches have been removed. Please drop this misleading discussion from the FEIS and explain what is happening in a more upfront manner.

The Forest Service could only respond by saying that they disagree, without providing any quantitative analysis to dispel that comment.

In Project File document 111017WildlifeNFMACCommentsMR.docx, the question, “What do you want it to be? (Desired Conditions)...” is answered, in part:

Management Indicator Species (MIS)

Fisher: In VRUs 7 and 17, assure 40+% of the landscape is available as contiguous forest patches large standing and down dead trees, connected by forested riparian habitats.

VRU Desired Distributions	Young	Mid-Seral	Mature	Old (Forest Plan = 10%)
1	20-40%	40-60%	15-20%	5-10%
3	15-25	15-35	10-30	20-50
7	10-20	15-35	10-30	35-65
8	15-25	20-40	15-35	10-40
10	10-20	10-30	10-30	35-65
12 stream breaklands; bunchgrass and shrublands				
17	10-20	15-35	10-30	25-55

The availability of mature **and older** forest habitats, well-distributed within desired patch sizes and occupying 40%+ ...of upland landscape, would assure opportunities for full habitat occupancy for American marten, fisher, and breeding pairs of northern goshawk, pileated and black-backed woodpeckers.

The answer to that question begins to get at what AWR/FOC asked in DEIS comments, “The FS must disclose its transparent, well thought-out long-term strategy for old-growth associated wildlife species viability in a properly-defined cumulative effects analysis area.” Unfortunately, nothing in the FEIS resembles such a strategy.

Ten percent old growth, the forestwide Standard, isn't even within the Forest Service's own “Desired Distributions” for VRUs 3, 7, 10, and 17, and is at the low end for VRU 8.

Lesica (1996) stated that use of 10% as minimum old-growth Standard in Northwest Montana may result in extirpation of some species. This is based on his estimate that 20-50% of low and many mid-elevation forests were in old growth condition prior to European settlement.

Yanishevsky (1994) also pointed out the inadequacy of maintaining merely “minimum” amounts of habitat such as snags and old growth (as set by the Forest Plan Appendix N standard):

(P)opulations of MIS should not be managed by using minimum habitat standards. MIS standards should take into account the known requirements of old-growth dependent and associated species as well as the enormous gaps in current knowledge of the long-term requirements of these species, and about old-growth ecosystems *per se*.

(A) dangerous tendency of the Forest Service is to manage for habitat minimums, rather than a range about the mean. The use of minimum standards in complex biological systems in general is:

Likely to create homogenous conditions ...rather than a natural mosaic or range of habitats and presumably population conditions. Under the former condition the diversity, resilience and resistance to disturbance of all populations may be compromised ...[increasing the potential] for regional extinction.

(USDA Forest Service 1993a).

(M)inimal area required to sustain a group, minimal age of the trees used, and minimal populations sizes (puts species) at unjustifiable risk, allowing no margin of safety in the event of researcher error, climatic variation, or other factors (Jackson 1986).

Conner (1979) indicates that cavity nesting birds may be threatened by management strategies based on minimums. The pileated woodpecker is of special concern. Most forest woodpeckers probably evolved in a relatively stable environment, in which natural selection favored individuals that use trees closest to the mean size (*id.*). Providing minimum or suboptimal conditions is likely to lead to low nesting success, gradually eliminating such species. (*id.*).

Even if the arithmetic mean of a criteria (such as snag DBH) is used as a management standard, rather than the minimum value for that criteria, the consistent use of habitat components of average measure could pose risk to a species; because with a normal distribution, by definition, approximately one half of the individuals select habitat components larger than the mean. The mean diameter of pileated woodpecker nest trees in northwest Montana is 30 inches DBH (McClelland 1979 and 1989). The standard for “large” snag retention on most Forests in Region 1 is 20 inches DBH minimum. Of 106

pileated woodpecker nest trees, McClelland found only 12 nest trees (11 percent) less than or equal to 20 inches DBH (McClelland 1989). Clearly, a “large” snag standard of 20 inches DBH cannot ensure the long-term viability of pileated woodpeckers that need larger trees for nesting. Similar arguments have been presented for other pileated woodpecker minimum management requirements (*see e.g.*, Caton 1992, Gross 1993) and other old-growth MIS, such as the pine marten and northern goshawk (*see e.g.*, Johnson 1992, Noss 1992, Resources Limited/Five Valleys Audubon Society 1992, Soukkala 1992, Natural Resources Defense Council 1993).

If the Forest Service was really interested in making its old-growth standards consistent with the best available science, it would undertake an amendment process that would increase its “minimum”⁸ 10% standard (and the 5% distribution standard) up to a level within the natural range of variability, resembling reference conditions. Unfortunately, it looks as though the Nez Perce National Forest had its own science expert weigh in on this topic: “The Ranger has indicated he is not interested in increasing old growth, believing there is enough OG out there.” (111017WildlifeClearCreekNFMAComments.docx)

The FEIS is inconsistent across its analyses, stating in some places that no logging would occur in old growth, and in other places stating that “improvement harvest” (logging) would occur. Such confusing and misleading analyses violate NEPA. The FEIS fails to consider and use the best available science, in violation of NFMA and additionally, NEPA's requirements that EISs demonstrate scientific integrity. *See* 36 C.F.R. 219.3; 40 C.F.R. 1502.24.

In sum, it appears the agency wants to make the definition of old growth to be a simplistic numbers and database analysis game, void of biologically vital data gathered in the field that documents what is unique about old growth—not just a few large, old trees left over after logging, but decadence, rot, snags, down logs, patchy irregular canopy layers—things that can’t be created by the agency’s version of “restoration,” things that will be depleted by such management actions—all which are habitat characteristics needed to maintain wildlife species viability. And maybe the agency considers it bad policy for its biologists to be actually out on the ground, documenting what is so special about old growth. After experiencing the old growth, they would be stronger advocates for not logging it. They might even spot a fisher, a lynx, or a goshawk, or a pileated woodpecker—if the habitat hasn’t been too degraded towards “minimum criteria” by the previous logging project.

REMEDY:

1. Prepare a Supplemental EIS with action alternatives that don’t require degrading the Forest Plan Appendix N old-growth standards. Base the “restoration project” alternatives upon “a landscape OG strategy” as recommended by the ID Team (110929ClearCreekIDTMeetingPrep.docx), one that is based on the best available science so that it genuinely maintains and restores habitat. Examples include Iverson et al. 1996; Harris, 1984; Zack et al., 1997; Hayes, 1980.

2. If the Forest Service is still interested in making its old-growth standards consistent with the best available science, undertake an amendment process that would increase its forestwide and

⁸ <http://dictionary.reference.com> defines “minimum” as: “least possible.”

distribution standards to a level within the natural range of variability, resembling reference conditions.

XXXI. FEIS FAILS TO DEMONSTRATE CONSISTENCY WITH FOREST PLAN STANDARDS DESIGNED TO INSURE VIABILITY OF OLD GROWTH- AND SNAG-DEPENDENT WILDLIFE SPECIES.

We fully incorporate the previous section of the Objection within this section.

AWR/FOC comments on the DEIS included:

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of old-growth dependent wildlife species is needed over the landscape. Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the NEZ PERCE-CLEARWATER NF makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992).

The Forest Service is required to manage the Forest consistent with the Forest Plan. Forest Plan standards are non-discretionary, and include the following:

Wildlife and Fish

1. Maintain viable populations of existing native and desirable non-native vertebrate wildlife species.

3. Monitor population levels of all Management Indicator Species on the Forest. These include bald eagle, grizzly bear, gray wolf, peregrine falcon, elk, moose, bighorn sheep, pileated woodpecker, goshawk, pine marten, fisher, westslope cutthroat trout, summer steelhead, and spring chinook. These species have been selected because (a) they are threatened and endangered; (b) they have special habitat needs that may be influenced significantly by planned management programs; (c) they are commonly hunted, fished, or trapped; (d) they are non-game species of special interest; or (e) their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality.

Population levels will be monitored and evaluated as described in the Forest Plan Monitoring Requirements (Chapter V of the Forest Plan).

7. Provide management for minimum viable populations of old-growth and snag-dependent species by adhering to the standards stated in Appendix N.

Additionally, management of Forest Plan Management Area 20 lands prioritizes “critical habitat for wildlife species dependent on old-growth forest conditions.”

Forest Plan Appendix N identifies the Forest Plan old-growth management indicator species (MIS):

For the Nez Perce National Forest the primary indicator species are pileated woodpecker, goshawk, and fisher. Pine martin (sic) is considered a secondary indicator species because it inhabits both mature and old-growth stands.

Forest Plan Appendix N also explains the basis for the use of old-growth MIS as a proxy for other species associated with old growth:

Old-growth indicator species are those species of wildlife that are dependent on or that find optimum habitat in old-growth stands for at least part of their life cycle. It is assumed that if the requirements of these species are met, the requirements of other old-growth associated species will be satisfied.

In other words, if viability is not being assured for the old-growth MIS, it is also not being assured for the Sensitive, Threatened, and Endangered species that fulfill important life history needs by utilizing key old-growth forest attributes.

Forest Plan Appendix N Old-Growth Standards include:

1. Minimum Requirements for Amount and Distribution of Old Growth Current information indicates that, in order to maintain a viable population of old-growth-dependent species, it is necessary to maintain 10 percent of the total forested acres as old growth with no less than 5 percent of the forested acres maintained as old growth within each prescription watershed or combination of watersheds totalling 5,000 to 10,000 acres. If less than 5 percent old growth exists in a drainage, the additional required acres will be assigned to adjacent drainages where excess old growth is available.

An additional 5 percent of the forested acres within each prescription watershed shall be designated as replacement old growth.

In the previous section of this Objection, we raised the point that the Forest Service is not able to demonstrate consistency with the forestwide old-growth 10% standard, a concern that is shared with ID Team members. A project file spreadsheet ("Clear Creek 2011 Exams Forest Plan Old Growth Stands) reveal many of the stands previously thought to be old growth (based upon out-of-date, mostly 1980s-era stand exam data) 2011 do not now even meet less stringent Green et al. criteria. There is no analysis that considers the implications of this falldown factor, arising from the age and unreliability of much of the forestwide old-growth survey data. AWR/FOC comments on the DEIS had asked, "Disclose the method used to quantify old growth forest acreages and its rate of error based upon field review of its predictions." These deficiencies of the analysis leave it short of NEPA and NFMA requirements for the use of the best available science and reliable data in analyses, in order to demonstrate compliance with the Forest Plan.

The Forest Service will claim, under its numbers game, that identifying 10% of the Forest as old growth assures viability. This fails to consider the quality of old growth in terms of other Forest Plan Appendix N Standards. These include:

Where available, stands should be at least 300 acres. Next best would be a core block of 150 acres with the remaining blocks of no less than 50 acres and no more than 1/2 mile

away. If existing old-growth blocks are less than 100 acres, the stands between the old-growth blocks should be designated old-growth replacement. The entire unit consisting of old-growth blocks and replacement old growth should be managed as an old-growth complex. If the old-growth component is less than 50 percent of the complex, the complex should be considered replacement old growth. Within the old-growth complex, only the stands that meet old-growth criteria will be counted toward meeting the allocation for existing old growth. The replacement stands will be counted toward meeting the allocation for replacement old growth.

Ideally the perimeter to area ratio of old-growth blocks should be minimized. Linear strips at least 300 feet wide along streams are acceptable if more suitable sites are not available.

Where possible, roads should not be located through or adjacent to old-growth stands in order to reduce human disturbance, loss of snags to firewood cutters, windthrow, and micro-climate changes.

To increase the probability of species immigration and colonization of old-growth islands and to facilitate genetic interchange between isolated population demes, a system of corridors interconnecting old-growth islands is required. Because of Forest direction to manage riparian areas to enhance riparian-dependent species and because the dendritic pattern of stream-side riparian zones readily facilitates connecting old-growth islands, riparian zones will serve as the principal means to provide interconnecting corridors. Corridors should be extensions of closed or nearly closed canopy of forest of sufficient width to resist blow-down.

The Ninth Circuit Court of Appeals ruled that the Forest Service “must both describe the quantity and quality of habitat that is necessary to sustain the viability of the species in question and explain its methodology for measuring this habitat.” *Lands Council v. McNair*, 629 F.3d 1070, 1081 (9th Cir. 2010). Here, the FEIS fails to describe the quantity and quality of habitat necessary to sustain the viability of the species in question and it does not properly “explain its methodology for measuring this habitat.”

The FEIS states, “Data from the 2007 Forest Inventory and Analysis indicate that an estimated 13.4% of the Forest is old-growth habitat, as defined by Green et al. (1992). The lower and upper confidence interval bounds are 11% and 16.1%. The Forest meets the Forest-wide old-growth standard.” What the FEIS fails to disclose is that the size of the plots used by the FIA methodology are 1/4-acre in size, which is far smaller than Forest Plan old-growth patch size Standards to be considered, biologically speaking, effective habitat for old growth MIS. This violates NEPA.

The FEIS also does not analyze and disclose the natural historic range vs. current conditions regarding patch size, edge effect, and amount of interior forest old growth in the OGAs. FOC/AWR DEIS comments asked, “How can old growth function when only 16% meet the preferred size criterion?” The Forest Service did not answer. The FEIS also does not sufficiently analyze and disclose the level of fragmentation, road effects, and past logging on the **quality** of old-growth and associated species’ habitat. The FEIS did not analyze or disclose the forestwide

level of management-induced edge effects on old-growth associated species' habitat, and how much total edge effect would be increased, by project activities in the affected OGAs. Fragmentation reduces the ability to provide for the habitat needs of old-growth associated species following previous management activities.

Forest Plan Appendix N Standards include, "Where possible, roads should not be located through or adjacent to old-growth stands in order to reduce human disturbance, loss of snags to firewood cutters, windthrow, and micro-climate changes." The FEIS discloses:

Alternatives B and C build 2 miles and Alternative D builds 1 mile of temporary roads through old-growth habitats. The average length is 0.1 miles. Road building would remove an average of 0.4 acres of vegetation on 17 road segments under Alternatives B and C and on 13 segments under Alternative D; the total amount of old growth disturbed by temporary roads would be 7 acres and 5 acres, respectively.

This is obviously a violation of the Forest Plan Standard. The FEIS also states:

The largest impact would be removal of large green and dead trees, but the effects would be indistinguishable when compared to natural diversity and openings in old-growth habitats. The roads would be decommissioned after use. Temporary roads would cause no cumulative effects to MA 20.

The FEIS declares that the effects of running a road through old growth "indistinguishable" from a natural opening, which is ludicrous. Unlike a natural openings, trees will be taken off-site, snags will be felled for safety purposes, soils will be compacted, and slash will be burned. "No cumulative effects" is false on the face of it, in violation of NEPA. Comments on the DEIS by Harry Jageman include:

You suggest that up to two miles of temporary road will be built in old growth stands under alternatives B and C, and one mile on Alternative D. However, you dismiss these impacts and suggest "the effects would be indistinguishable when compared to natural diversity and openings in old-growth habitats". Excuse me! A straight line road corridor, even if it has been perfectly re-contoured is still going to look like a rehabbed road prism rather than a natural opening in an old growth stand.

FOC/AWR DEIS comments also asked, "How is the creation of roads in old growth protection? This would actually negatively affect the stands by creating more edge effect, which is known to harm species such as cavity nesters."

Lehmkuhl, et al. (1991) state:

Competition between interior and edge species may occur when edge species that colonize the early successional habitats and forest edges created by logging (Anderson 1979; Askins and others 1987; Lehmkuhl and others, this volume; Rosenberg and Raphael 1986) also use the interior of remaining forest (Kendeigh 1944, Reese and Ratti 1988, Wilcove and others 1986, Yahner 1989). Competition may ultimately reduce the viability of interior species' populations.

Microclimatic changes along patch edges alter the conditions for interior plant and animal species and usually result in drier conditions with more available light (Bond 1957, Harris

1984, Ranney and others 1981).

Fragmentation also breaks the population into small subunits, each with dynamics different from the original contiguous population and each with a greater chance than the whole of local extinction from stochastic factors. Such fragmented populations are metapopulations, in which the subunits are interconnected through patterns of gene flow, extinction, and recolonization (Gill 1978, Lande and Barrowclough 1987, Levins 1970).

USDA Forest Service, 2004a states:

Forested connections between old growth patches ...(widths) are important because effective corridors should be wide enough to “contain a band of habitat unscathed by edge effects” relevant to species that rarely venture out of their preferred habitats (Lidicker and Koenig 1996 and Exhibit Q-17).

(3-201.) Harrison and Voller, 1998 assert “connectivity should be maintained at the landscape level.” They adopt a definition of landscape connectivity as “the degree to which the landscape facilitates or impedes movement among resource patches.” Also:

Connectivity objectives should be set for each landscape unit. ...Connectivity objectives need to account for all habitat disturbances within the landscape unit. The objectives must consider the duration and extent to which different disturbances will alienate habitats. ... In all cases, the objectives must acknowledge that the mechanisms used to maintain connectivity will be required for decades or centuries.

Harrison and Voller, 1998 further discuss these mechanisms:

Linkages are mechanisms by which the principles of connectivity can be achieved. Although the definitions of linkages vary, all imply that there are connections or movement among habitat patches. Corridor is another term commonly used to refer to a tool for maintaining connectivity. ...the successful functioning of a corridor or linkage should be judged in terms of the connectivity among subpopulations and the maintenance of potential metapopulation processes. (Internal citations omitted.)

Harris, 1984 discusses connectivity and effective interior habitat of old-growth patches:

Three factors that determine the effective size of an old-growth habitat island are (1) actual size; (2) distance from a similar old-growth island; and (3) degree of habitat difference of the intervening matrix. ... (I)n order to achieve the same effective island size a stand of old-growth habitat that is surrounded by clearcut and regeneration stands should be perhaps ten times as large as an old-growth habitat island surrounded by a buffer zone of mature timber.

Harris, 1984 discusses habitat effectiveness of fragmented old growth:

(A) 200-acre (80 ha) circular old-growth stand would consist of nearly 75% buffer area and only 25% equilibrium area. ...A circular stand would need to be about 7,000 acres (2,850 ha) in order to reduce the 600-foot buffer strip to 10% of the total area. It is important to note, however, that the surrounding buffer stand does not have to be old growth, but only tall enough and dense enough to prevent wind and light from entering below the canopy of the old-growth stand.

That author believes that “biotic diversity will be maintained on public forest lands only if conservation planning is integrated with development planning; and site-specific protection areas must be designed so they function as an integrated landscape system.” Harris, 1984 also states:

Because of our lack of knowledge about intricate old-growth ecosystem relations (see Franklin et al. 1981), and the notion that oceanic island never achieve the same level of richness as continental shelf islands, a major commitment must be made to set aside representative old-growth ecosystems. This is further justified because of the lack of sufficient acreage in the 100- to 200-year age class to serve as replacement islands in the immediate future. ... (A) way to moderate both the demands for and the stresses placed upon the old-growth ecosystem, and to enhance each island’s effective area is to surround each with a long-rotation management area.

Forest Plan Appendix N Standards address some of those issues:

Where available, stands should be at least 300 acres. Next best would be a core block of 150 acres with the remaining blocks of no less than 50 acres and no more than 1/2 mile away. If existing old-growth blocks are less than 100 acres, the stands between the old-growth blocks should be designated old-growth replacement. The entire unit consisting of old-growth blocks and replacement old growth should be managed as an old-growth complex. If the old-growth component is less than 50 percent of the complex, the complex should be considered replacement old growth. Within the old-growth complex, only the stands that meet old-growth criteria will be counted toward meeting the allocation for existing old growth. The replacement stands will be counted toward meeting the allocation for replacement old growth.

Ideally the perimeter to area ratio of old-growth blocks should be minimized. Linear strips at least 300 feet wide along streams are acceptable if more suitable sites are not available.

Where possible, roads should not be located through or adjacent to old-growth stands in order to reduce human disturbance, loss of snags to firewood cutters, windthrow, and micro-climate changes.

Where only 5 percent or less old growth exists in a drainage, all suitable old- growth stands should be managed as old growth. Where more than 5 percent exists, stands should be selected for old-growth management based on their priority ranking, with highest priority stands selected first and in consideration of other resource needs.

To increase the probability of species immigration and colonization of old-growth islands and to facilitate genetic interchange between isolated population demes, a system of corridors interconnecting old-growth islands is required. Because of Forest direction to manage riparian areas to enhance riparian-dependent species and because the dendritic pattern of stream-side riparian zones readily facilitates connecting old-growth islands, riparian zones will serve as the principal means to provide interconnecting corridors. Corridors should be extensions of closed or nearly closed canopy of forest of sufficient width to resist blow-down.

Project File document “Mike Ward DRAFT Large Tree Retention Strategy.docx” states, “Timber harvest within the drainage has fragmented old growth and wildlife habitat, and prior harvest patterns do not simulate natural disturbance.” Project File document “OldGrowthForestReport2.docx” states that “(T)he small size and long, linear shape of some patches do not provide interior habitat conditions.” However this is not disclosed in the FEIS, nor is the existing condition's consistency with most of the above identification and designation standards disclosed, in violation of the Forest Plan and NEPA.

The FEIS also does not demonstrate consistency with the following Management Area 20 Standards, in violation of NFMA:

- TIMBER: 3. Select, locate, and administer old-growth areas to protect them from firewood cutting.
- FACILITIES: 2. Restrict or close all secondary collector and local roads after management activities cease in adjacent areas.

FOC /AWR comments on the DEIS included, (T)he DEIS fails to look at habitat actually used by the species like fisher, marten, goshawk, black-backed woodpeckers, and pileated woodpeckers. Forest plan monitoring has not been done...” AWR/FOC comments on the DEIS also included:

(T)emporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the NEZ PERCE-CLEARWATER NF. It is also of paramount importance to monitor population during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

The FEIS does not disclose that population trend monitoring as required by the Forest Plan has not been performed, which violates NFMA and NEPA. The U.S. District Court of Idaho in *Lands Council v. Cottrell*, required the FS to demonstrate stable or increasing populations of MIS. The Nez Perce NF has not demonstrated stable or increasing populations of MIS. The Committee of Scientists (1999) states:

Habitat alone cannot be used to predict wildlife populations... The presence of suitable habitat does not ensure that any particular species will be present or will reproduce. Therefore, populations of species must also be assessed and continually monitored.

Also discussed in the previous section of this Objection, the Forest Service performed its recent project area old-growth surveys using criteria that are inconsistent with Forest Plan Appendix N Old-Growth Standards. This means the agency has not adequately validated old growth as the Forest Plan (Appendix N) requires. It also means that the Forest Service data cannot demonstrate consistency with the Standard requiring “5 percent of the forested acres (be) maintained as old growth within each prescription watershed or combination of watersheds totalling 5,000 to 10,000 acres.”

Forest Plan Appendix N Old-Growth Standards also require that “(a)n additional 5 percent of the forested acres within each prescription watershed shall be designated as replacement old growth.” Replacement old growth is not even discussed in the FEIS in violation of the Forest Plan.

Forest Plan Appendix N Old-Growth Standards include:

2. Identification and Designation of Old-Growth Stands

Old-growth stands will be identified through the use of stand exam information, aerial photos, and field reconnaissance. Stands will be prioritized on the basis of how many of the six criteria listed under "Definitions" are met, size of stand, presence of roads, age class of surrounding timber (e.g. clear cut vs. mature) and known or suspected use by the old-growth indicator species. All stands will be inventoried and prioritized with highest priority for inventory in those drainages with proposed timber sales or other activities that could adversely impact old growth.

Verify the quality, amount, and distribution of existing and replacement old-growth habitat as part of project planning.

The FEIS does not indicate that all stands now proposed for management have been evaluated for their potential for inclusion in the old-growth inventory, is in violation of the Standard requiring evaluation of stands' relative qualities using the six criteria. Perhaps this is because "The Ranger has indicated he is not interested in increasing old growth, believing there is enough OG out there." (Project file document 111017WildlifeClearCreekNFMAComments.docx.) This is a violation of the Forest Plan and NEPA's requirement that analyses demonstrate scientific integrity.

The FEIS states, "The project area contains 11% verified old growth, which meets the Forest Plan standard." However this statement is erroneous—there is no "project area" standard. Again, the Standard relating to the size of a project area is the Forest Plan Appendix N Standard requiring "5 percent of the forested acres (be) maintained as old growth within each prescription watershed or combination of watersheds totalling 5,000 to 10,000 acres." This is explained by the FEIS:

Old-growth analysis areas (OGAAs) were designated across the Forest in order to maintain the minimum Forest Plan requirements for amount and distribution of old-growth habitats. The analysis area includes 7 OGAA's. Two of the OGAA's are small and do not meet the Forest Plan assessment scale of 5,000–10,000 acres. OGAA 618 is combined with adjacent OGAA's to comply with Forest Plan direction.

The FEIS states:

Additional old-growth forest is present in each of the OGAA's but has not been verified by recent stand exams. Stand data (TSMRS) show an additional 1,722 acres (4%) over 150 years old and over 21 inches average dbh (Table 3-27). Figure 3-7 shows the **unverified old growth** in each OGAA. Additionally, 24% of the analysis area is contained within RHCA's, which would be managed for future old growth.

(Emphasis added.) From , "Unverified" means "not having been confirmed, substantiated, or proven to be true." One way the Forest Service can eliminate unnecessary FEIS verbiage, and also reduce confusion, is by leaving out unproven speculation. Comments on the DEIS by Harry Jageman include:

Your old growth analysis is somewhat difficult to understand. You have a long discussion on unverified old growth, but it is unclear how these stands fit into your old growth retention strategy. The difference between unverified old growth and verified old growth is unclear and there is no discussion on the methods that were used to determine the stands in each category.

Another part of the FEIS's unproven speculation is the degree to which habitat within RHCAs contributes to old-growth MIS and associated species' viability. Forest Plan Appendix N Standards include:

Because of Forest direction to manage riparian areas to enhance riparian-dependent species and because the dendritic pattern of stream-side riparian zones readily facilitates connecting old-growth islands, riparian zones will serve as the principal means to provide interconnecting corridors. Corridors should be extensions of closed or nearly closed canopy of forest of sufficient width to resist blow-down.

Comments on the DEIS by Harry Jageman include:

You also indicate that old growth blocks are supposed to be over 50 acres in size according to the Forest Plan, but yet 42% of the stands you have selected are less than 50 acres in size. You suggest that PACFISH buffers connect these areas, but make no mention of the condition of these buffers and do not consider that narrow connecting buffer strips may place some species at risk. The Forest plan suggests large old growth patch sizes of over 300 acres to avoid edge effects and vulnerability of species that may be attracted to these areas.

But the FEIS does not include an analysis of the robustness of habitat quality remaining in riparian areas. Prior to the mid-1990s (PACFISH Amendment) and especially prior to the 1987 Forest Plan ROD, riparian areas on the Forest were logged with little regard to retaining terrestrial or aquatic habitat quality.

With all the above-identified defects in the FEIS's analysis for old-growth habitat, the Forest Service is violating Forest Plan Wildlife Standard #1, which is to "Maintain viable populations of existing native and desirable non-native vertebrate wildlife species." These include the old-growth MIS and the other wildlife species discussed in other sections of this Objection.

REMEDY:

Prepare a Supplemental EIS, addressing the following issues:

1. Base the analysis on the old-growth surveys and methodology that adheres to Forest Plan Appendix N Standards.
2. Analyze and disclose the implications of the falldown factor that arises from the age and unreliability of the forestwide old-growth survey data.
3. Include action alternatives do not locate roads (temporary or system) through or adjacent to old-growth stands. Analyze and disclose the existing road impacts on old growth in the project area.

4. Describe the quantity and quality of habitat necessary to sustain the viability of old-growth MIS, in order to demonstrate consistency with Forest Plan Wildlife Standard #1, which is to “Maintain viable populations of existing native and desirable non-native vertebrate wildlife species.”
5. Provide an analysis of the methodology of the FIA data collection, and how the data does or does not show that the habitat it measures conforms to Forest Plan Appendix N old growth Standards.
6. Analyze and disclose the natural historic range vs. current conditions regarding patch size, edge effect, and amount of interior forest old growth in the OGAs and forestwide.
7. Disclose how much of MA 20 in the project area and forestwide meets current forest plan standards, as genuine verified old growth.
8. Identify replacement old growth as necessary after validation of old growth in the OGAs.
9. Verify the FEIS’s unproven speculation that habitat within RHCAs contributes to old-growth MIS and associated species’ viability.
10. Create a detailed map of the verified old growth in the OGAs, plus the intact RHCAs that connect the verified old growth, plus the replacement old growth—which demonstrates compliance with these provisions of the Forest Plan Appendix N Standards:
 Where available, stands should be at least 300 acres. Next best would be a core block of 150 acres with the remaining blocks of no less than 50 acres and no more than 1/2 mile away. If existing old-growth blocks are less than 100 acres, the stands between the old-growth blocks should be designated old-growth replacement. The entire unit consisting of old-growth blocks and replacement old growth should be managed as an old-growth complex. If the old-growth component is less than 50 percent of the complex, the complex should be considered replacement old growth. Within the old-growth complex, only the stands that meet old-growth criteria will be counted toward meeting the allocation for existing old growth. The replacement stands will be counted toward meeting the allocation for replacement old growth.

XXXII. DEFICIENT CUMULATIVE EFFECTS ANALYSIS OF FIRE SUPPRESSION.

AWR/FOC DEIS comments included:

Disclose when and how the Nez Perce-Clearwater National Forest made the decision to suppress natural wildfire in the Project area and replace natural fire with logging and prescribed burning; Disclose the cumulative impacts on the Forest-wide level of the Nez Perce-Clearwater National Forest’s policy decision to replace natural fire with logging and prescribed burning;

The Forest Service responded:

It is not clear what “decision” the commenter is referring to. However, the purpose and need and proposed action are consistent with programmatic direction in the Nez Perce Forest Plan. The Nez Perce Forest Plan includes goals, objectives and standards related to fuel reduction which are outlined in the FEIS. ...In accordance with NEPA direction, the effects analysis is limited to potential direct, indirect and cumulative impacts from the proposed action and alternatives.

We now inform the Forest Service what “decision” was meant by that comment—which should have been obvious—it was the Forest Plan ROD. FOC scoping comments stated:

Along with the costs of the specific project actions, the costs of road maintenance proportionately attributable to this project and the cumulative economic impacts of carrying out fire suppression policy and the resultant need to carry out such projects as this one should be disclosed.

AWR/FOC DEIS comments included, “What about the role of mixed severity and high severity fire – what are the benefits of those natural processes? How have those processes (mixed and high severity fire) created the ecosystems we have today?” The Forest Service responded in part:

While they may be natural processes, the Forest Plan requires suppression in about 70% of the drainage, primarily because it occurs within a WUI. Proposed project activities will create similar patch size and age class structures as those provided by wildfire with less risk to the adjacent private lands and federal lands managed for timber harvest.

Actually, WUI was invented after the Forest Plan was created, in response to the National Fire Plan, a policy for which no NEPA analysis has ever fully addressed. AWR/FOC DEIS comments also included:

If the Forest Service did not conduct its Fire Plan, please disclose the cumulative effects of Forest-wide implementation of the Fire Plan in the Clear Creek project to avoid illegally tiering to a non-NEPA document. Specifically analyze the decision to prioritize mechanical, human-designed, somewhat arbitrary treatments as a replacement for naturally-occurring fire.

Since disruption of fire cycles is identified, the Nez Perce-Clearwater NFs need to take a hard look at its fire policies. The development of approved fire management plans in compliance with the Federal Wildland Fire Policy was the number one policy objective intended for immediate implementation in the Implementation Action Plan Report for the Federal Wildland Fire Management Policy and Program Review. In general, the FS lags far behind other federal land management agencies that have already invested considerable amounts of time, money, and resources to implement the Fire Policy. Continued mismanagement of national forest lands and FS refusal to fully implement the Fire Policy puts wildland firefighters at risk if and when

they are dispatched to wildfires. This is a programmatic issue, one that the current Forest Plan does not adequately consider. Please see Ament (1997) as comments on this proposal, in terms of fire policy and Forest Planning.

The Forest Service responded:

The Fire Plan is a programmatic issue to that needs to be addressed at the Forest level. It is not a topic for smaller site-specific projects. The Clear Creek project does incorporate the need to treat fuels within the Wildland Urban Interface (WUI). The Forest has also adopted areas where fire is allowed to burn to reduce risks to firefighters while allowing natural processes to occur.

(Emphasis added.) In *Lands Council v. Cottrell* the U.S. District Court of Idaho ordered: “...(A)nalysis of the Project’s environmental impact must address the cumulative impact of fire and fire management under whatever policy is in place at the time the environmental impact statement is drafted.” Obviously, as the Forest Service’s response comments indicated, that policy is programmatic—forestwide.

The Forest Service’s responses to comments on the DEIS state that the current direction for wildfire management on the Forest comes from the Forest Plan. In other words, the 1987 Forest Plan *is* the Nez Perce National Forest’s “Fire Policy.” The no action alternative would maintain existing level of management including fire suppression: “Fire suppression would continue. **Risk of large-scale stand-replacing fire would increase**” (emphasis added). If this is true, it means that, as forestwide fire suppression continues, the result of that Forest Service management is to **increase the risk of large-scale stand-replacing fire across the entire forest**. Even if the effect of recent projects has been significant reduction of such “stand-replacing” fires in those project areas—a claim that is scientifically controversial and unproven for the long term, and unquantified for any defined short term—the area affected by such projects in recent years is miniscule compared to the entire, fire-suppressed Forest.

Fire suppression doesn’t really mean “no action”, but may be properly included in the no action alternative if the environment impacts of fire suppression been analyzed and disclosed at the programmatic level, such as in the Forest Plan EIS. But the problem with this situation is the scale of ecological damage caused by the wide-scale fire suppression program that began almost 100 years ago wasn’t recognized until **after the Forest Plan was adopted in 1987**. It constitutes significant new information that did not result in any new forest plan amendments, revisions, or other programmatic NEPA decisions or direction.

The Forest Plan EIS itself did not contemplate a range of possible fire planning scenarios—there were no differences under each alternative it analyzed. Nor did the Forest Plan EIS present anything like an analysis of the impacts of fire suppression/fire exclusion on the pattern, composition, and succession of vegetation as do project-level NEPA documents since the mid-1990s. That

scientific information became a major theme of the Interior Columbia Basin Ecosystem Management Project (ICBEMP) in the 1990s: “Aggressive fire suppression policies of Federal land-managing agencies have been increasingly criticized as more has been learned about natural fire cycles.” (USDA FS & USDI BLM 1996, p. 22.)

Also, “Substantial changes in disturbance regimes—especially changes resulting from fire suppression, timber management practices, and livestock grazing over the past 100 years—have resulted in moderate to high departure of vegetation composition and structure and landscape mosaic patterns from historical ranges.” (USDA FS & USDI BLM 2000, Ch. 4. P. 18.)

Part of the expressed purpose and need for the project, included, in the FEIS, is:
Historic logging practices and fire suppression have affected the diversity of tree species in the Project area. Ladder fuels have increased, and a shift to more shade-tolerant species has occurred. Currently, a higher percentage of grand fir and Douglas-fir exist than natural long-term disturbances patterns would have created and that would have dominated these habitat types in the absence of historic logging and fire suppression. Grand fir and Douglas-fir are more susceptible to insects and disease and grand fir is less likely to survive intense wildfires than early seral species (e.g., ponderosa pine, western larch, and western white pine).

Such effects of fire suppression are not unique to this project area—similar language has been included in NEPA documents for all logging projects on this Forest for at least a decade.

The FEIS discloses that “Historically, **fire was *the* primary disturbance factor** that shaped the composition and structure of forests in the Clear Creek drainage.” (Emphasis added.) The FEIS continues:

Effective wildfire suppression since the early 1900s has greatly reduced fire frequency in the area. Fires that occur in the area are suppressed due to the proximity to private property adjacent to the forest boundary and the timber management areas. Current fuel profiles would allow crown fires to establish in over 50% of the area. Once established, these fires are virtually impossible to stop without the fire running into a barrier (such as a change in fuel type) or the weather variables changing (such as relative humidity rising overnight). Indirect suppression strategies would need to be employed for a crown fire. Conditions like these can lead to large amounts of burned acreage, high costs, and adverse impacts to resources including soils, wildlife, water resources, and infrastructure.

The FEIS thus implicates fire suppression—as continued and enabled by the Forest Plan—in causing major effects for which the Forest Service now cobbles together projects (timber sales) such as Clear Creek, in reactionary fashion.

The FEIS continues, for the no-action (plus fire-suppression) alternative: “A fire would reduce the amount of old-growth habitat available to species such as fisher, pileated woodpecker, goshawk, and American marten.” Multiply this effect times the extent of the entire forest, and what the agency is admitting is that forestwide fire suppression is leading to stand-replacing fires outside what is natural, and the results will be wide-scale destruction of habitat for old-growth MIS and other associated wildlife species. Yet such analyses and disclosures don't occur in the Forest Plan EIS.

It may be that fire suppression in the project area has not, in reality, caused a significantly elevated risk of abnormal fire in the project area. We believe the agency is playing this fire-scare card in order to justify logging as “restoration.” However, playing the fire scare card is not just a project area issue—it is forestwide. The agency has put the joker in the deck, changing the whole game—not just one hand, which is what the Forest Service pretends.

The no-action alternative contemplated under the ICBEMP EIS **is the management direction found in the Forest Plan**: “Alternative S1 (no action) continues management specified under each existing Forest Service and BLM land use plan, as amended or modified by interim direction—known as Eastside Screens (national forests in eastern Oregon and Washington only), PACFISH, and INFISH—as the long-term strategy for lands managed by the Forest Service or BLM.” (USDA FS & USDI BLM 2000. Ch. 5, pp 5-6.)

To the degree that the Clear Creek “restoration” project implements the direction in the 1987 Forest Plan, it is continuing to implement the scale of ongoing ecological damage disclosed under “no-action” alternative for ICBEMP—but nowhere disclosed in the 1987 Forest Plan, its EIS, or any other programmatic NEPA document for this Forest.

To the degree that the Clear Creek “restoration” project implements new direction not contemplated by the 1987 Forest Plan in response to the scientific studies and analyses from ICBEMP, it does so without completing programmatic, forestwide NEPA analysis—the only way planning decisions (Amendments or Revisions) can legitimately be implemented.

What we see nowadays are these project-level NEPA documents such as this FEIS, which implement a hybrid, reactionary management scheme, that continues to replace wildland fire with logging and burning, but again not in the context of an analysis of the cumulative, forestwide impacts required by the U.S. District Court.

The philosophy driving the Forest Service strategy to replicate historic vegetative conditions (i.e. desired conditions) is that emulation of the **results of** disturbance processes would conserve biological diversity. McRae et al. 2001 provide a scientific review summarizing empirical evidence that illustrates several significant

differences between logging and wildfire—differences which the Clear Creek FEIS fails to address.

Since the fire suppression and fuel reduction regime being implemented was not a planning scenario dealt with in sufficient detail during Forest Plan development, the cumulative ecological and economic costs and impacts go unexplained and undisclosed. The FEIS does not disclose how much of the Forest is considered to be out of whack in “forest health” terms due to fire suppression, nor does it disclose the implications of ever-increasing fire suppression costs that rob the agency's budgets for true restoration that its past road building and clearcutting have necessitated.

The FEIS also failed to provide a genuine analysis and disclosure of the varying amounts and levels of effectiveness of fuel changes attributable to: the varying ages of the past cuts, the varying forest types, the varying slash treatments, etc. And this goes for land of other ownership in the cumulative effects area for fire. The FEIS does not adequately analyze and disclose how the vegetation patterns that have resulted from past logging and other management actions influence future fire behavior.

Not considered by the Forest Plan EIS are the benefits of fire, for example Hutto, 1995 states: “Fires are clearly beneficial to numerous bird species, **and are apparently necessary for some.**” (p. 1052, emphasis added.) Hutto, 1995 whose study keyed on forests burned in the supposedly disastrous 1988 season, noted:

Contrary to what one might expect to find immediately after a major disturbance event, I detected a large number of species in forests that had undergone stand-replacement fires. Huff et al. (1985) also noted that the density and diversity of bird species in one- to two-year-old burned forests in the Olympic Mountains, Washington, *were as great as adjacent old-growth forests...*

...Several bird species seem to be relatively *restricted* in distribution to early post-fire conditions... I believe it would be difficult to find a forest-bird species more restricted to a single vegetation cover type in the northern Rockies than the Black-backed Woodpecker is to early [first 6 years] post-fire conditions. (Emphasis added).

USDA Forest Service 2011c states:

Hutto (2008), in a study of bird use of habitats burned in the 2003 fires in northwest Montana, found that within burned forests, there was one variable that exerts an influence that outstrips the influence of any other variable on the distribution of birds, and that is fire severity. Some species, including the black-backed woodpecker, were relatively abundant only in the high-severity patches. Hutto's preliminary results also suggested burned forests that were harvested fairly intensively (seed tree cuts, shelterwood cuts) within a decade or two prior to the fires of 2003 were much less suitable as post-fire forests to

the black-backed woodpecker and other fire dependent bird species. Even forests that were harvested more selectively within a decade or two prior to fire were less likely to be occupied by black-backed woodpeckers.

Hutto, 2008 states, “severely burned forest conditions have probably occurred naturally across a broad range of forest types for millennia. These findings highlight the fact that severe fire provides an important ecological backdrop for fire specialists like the Black-backed Woodpecker, and that the presence and importance of severe fire may be much broader than commonly appreciated.” Also, Project File document “120723HersheyDraft.docx” recognizes “The black-backed woodpecker represents species associated with large natural disturbances.” The Forest Service continues to manage against severely burned forests.

Hutto, 2006 states:

The profound failure of many decision makers to appreciate the ecological value of burned forests stems from their taking too narrow a view of what forests provide. ...Land managers, politicians, and the public-at-large need to gain a better appreciation of the unique nature of burned forests as ecological communities, ...and how important the legacy of standing deadwood is to the natural development of forests (Franklin et al. 2000).

The popular media have caught on to the need to appreciate the value of the natural process that is wildland fire. (*Wildfires can be a boon to fisheries, Out of fire's destruction comes new growth, Birds in the black, One year after fire Black Mountain is springing back to life, What in the blazes, The Washington Post 2002*). The media and others have also viewed opinions on the fiscal and environmental folly of the prevailing fire suppression policies (*As wildfire changes, so should we, Approaching firefighting's limits, Born of Fire, Money to Burn, Burning Money, Yellowstone fire guru ponders '88 and now*).

Even the USDA's own Agriculture Office of Inspector General has opined that the FS

...can further strengthen the cost-effectiveness of its firefighting without sacrificing safety by (1) having non-Federal entities pay an equitable share of wildfire protection costs, (2) **increasing the use of wildland fires to reduce forest vegetation such as underbrush that may fuel future fires and thereby increase costs**, and (3) establishing controls to assess the performance of line officers and incident commanders in controlling costs. (Inspector General Report 2006, emphasis added.)

The FEIS does not adequately justify vegetation treatments, neither for forest health as a reaction to fire suppression nor considering the impacts of fuel reduction as part of the ongoing fire suppression program.

REMEDY:

1. Prepare a Supplemental EIS for this project once the forest plan has been revised to analyze and disclose the full ecological and economic impacts of the Nez Perce-Clearwater National Forest fire policies.

XXXIII. DEFICIENCIES OF MODEL-BASED FEIS ANALYSES

A substantial portion of the FEIS's analysis relies upon the use of models. As mentioned in the FEIS, those models include:

7. Aquatics & Watershed: FISHSED, NEZSED and ECA.
8. Economics: The Forest Service Micro IMPLAN model and the Quicksilver model.
9. Fuels: The Forest Vegetation Simulator and Fire and Fuels Extension (FVS/FFE) model, and "fire behavior fuel models".
10. Noxious Weeds: The weed risk model.
11. Rare Plants: GIS modeling of habitat parameters.
12. Vegetation: The "vegetation inventory model", the Most Similar Neighbor modeling program, the Forest Vegetation Simulator (FVS), and "a patch analysis derived from the Fragstats program."
13. Visuals: The "visibility modeling."
14. Wildlife: "(M)odeled suitable habitat", "(m)odeling of potential habitat", "habitat modeling", and "ArcMap GIS was used for modeling, mapping, and quantifying habitats and Project impacts".
15. Wolverine: "(O)ccurrence ... (as modeled by Copeland et al. 2010)."
16. Elk: "Modeled elk security."

The Forest Service has not undertaken the task of determine the reliability of all the data used as input for the models used in the Clear Creek analysis. Since "an instrument's data must be reliable if they are valid" (Huck, 2000) this means the data that is input to a model must accurately measure that aspect of the world it is claimed to measure, or else the data is invalid for use by that model. Huck, 2000 states:

The basic idea of reliability is summed up by the word consistency. Researchers can and do evaluate the reliability of their instruments from different perspectives, but the basic question that cuts across these various perspectives (and techniques) is always the same: "To what extent can we say the data are consistent?" ... (T)he notion of consistency is at the heart of the matter in each case.

...(R)eliability is conceptually and computationally connected to the data produced by the use of a measuring instrument, not to the measuring instrument as it sits on the shelf.

Beck and Suring, 2011 "remind practitioners that if available data are poor quality or fail to adequately describe variables critical to the habitat requirements of a species, then only poor quality outputs will result. Thus, obtaining quality input data is paramount in modeling activities."

Larson et al. 2011 state:

Although the presence of sampling error in habitat attribute data gathered in the field is well known, the measurement error associated with remotely sensed data and other GIS databases may not be as widely appreciated.

During litigation of a timber sale on the Kootenai NF, the Forest Service criticized a report provided by Plaintiffs, stating “(Its) purported ‘statistical analysis’ reports no confidence intervals, standard deviations or standard errors in association with its conclusions.”

As Huck (2000) states, the issue of “standard deviations or standard errors” that the Forest Service raised in the context of litigation relates to the reliability of the data, which in turn depends upon how well-trained the data-gatherers are with their measuring tools and measuring methodology. In other words, different observations of the same thing must result in numbers that are very similar to result in small “standard deviations or standard errors” and thus high reliability coefficients, which in turn provide the public and decisionmakers with an idea of how confident they can be in the conclusions drawn from the data.

The next level of scientific integrity is the notion of “validity.” As Huck, (2000) explains, the degree of “content validity,” or accuracy of the model or methodology is established by utilizing other experts. This, in turn, demonstrates the necessity for utilizing the peer review process. The validity of the various models utilized in the FEIS’s analyses have, by and large, not been established for how agency utilizes them. No studies are cited which establishes their content validity, and no independent expert peer review process of the models has occurred.

So even if Forest Service data input to a model is reliable, that still leaves open the question of model validity. In other words, are the models scientifically appropriate for the uses for which the Forest Service is utilizing them? The FEIS defines “Model” as “A theoretical projection in detail of a possible system of natural resource relationships. A simulation based on an empirical calculation to set potential or outputs of a proposed action or actions.” (FEIS at G-14.)

It is unclear what the Forest Service means by “empirical calculation” or how it “sets potential” or “set outputs.” From www.thefreedictionary.com :

Empirical – 1. a. Relying on or **derived from observation or experiment**: empirical results that supported the hypothesis. b. Verifiable or provable by means of observation or experiment: empirical laws. 2. Guided by practical experience and not theory, especially in medicine.

(Emphasis added.) So the Forest Service is acknowledging that the models used for the Clear Creek analysis are “theoretical” in nature but by calling the models “empirical” implies that they are somehow based in observation or experiment that support the hypotheses of the models. That would be required, because as Verbyla and Litaitis (1989) assert, “Any approach to ecological modelling has little merit if the predictions cannot be, or are not, assessed for their accuracy using independent data.” This corresponds directly to the concept of “**validity**” as discussed by Huck, 2000: “(A) measuring instrument is valid to the extent that it measures what it purports to measure.”

However, there is no evidence that the Forest Service has performed validation of any the models for the way they were used to support the Clear Creek FEIS analyses. There is no documentation of someone using observation or experiment to support the models' inherent hypotheses.

Larson et al. 2011 state:

Habitat models are developed to satisfy a variety of objectives. ...A basic objective of most habitat models is to predict some aspect of a wildlife population (e.g., presence, density, survival), so assessing predictive ability is a critical component of model validation. **This requires wildlife-use data that are independent of those from which the model was developed.** ...It is informative not only to evaluate model predictions with new observations from the original study site but also to evaluate predictions in new geographic areas.

(Internal citations omitted, emphasis added). A 2000 Northern Region forest plan monitoring and evaluation report provides an example of the agency itself acknowledging the problems of data that is old and incomplete, leading to the limitation of models the Forest Service typically uses for wildlife analyses for old-growth MIS habitats:

Habitat modeling based on the timber stand database has its limitations: the data are, on average, 15 years old; canopy closure estimates are inaccurate; and data do not exist for the abundance or distribution of snags or down woody material...

(USDA Forest Service, 2000c.) In that case, the Forest Service expert believed the data were unreliable, so application of the model—it's validity—is limited.

Beck and Suring, 2011 state:

Developers of frameworks have consistently attained scientific credibility through published manuscripts describing the development or applications of models developed within their frameworks, but a major weakness for many frameworks continues to be a lack of validation. Model validation is critical so that models developed within any framework can be used with confidence. Therefore, we recommend that models be validated through independent field study or by reserving some data used in model development.

Larson et al. 2011 state:

(T)he scale at which land management objectives are most relevant, often the landscape, is also the most relevant scale at which to evaluate model performance. Model validity, however, is currently limited by a lack of information about the spatial components of wildlife habitat (e.g., minimum patch size) and relationships between habitat quality and landscape indices (Li et al. 2000).

Beck and Suring, 2011 developed several criteria for rating modeling frameworks—that is, evaluating their validity. Three of their criteria are especially relevant to this discussion:

Habitat– population linkage	Does the modeling framework incorporate vital rates (e.g., production, survival), other demographic parameters (e.g., density, population size); surrogates (e.g., quality of home ranges, habitat conditions in critical reproductive habitats, presence/absence) of population demographic parameters; or does the modeling framework model habitat conditions without specific consideration of wildlife population parameters?	0 = does not rely on population demographics or surrogates of modeled species 1 = relies on surrogates for population demographic parameters or framework; can utilize population demographics if desired, but is not dependent on them 2 = specifically relies on population demographics of modeled species
Scientific credibility	Has the framework gained credibility through publication of results, application of results, or other mechanisms to suggest acceptance by an array of professionals?	0 = limited credibility 1 = at least 1 publication of results using this framework, or other application of the modeling framework
Output definition	Is the output well defined and will it translate to something that can be measured?	1 = difficult 2 = moderate 3 = easy

NEPA states that “Accurate scientific analysis... (is) essential to implementing NEPA.” And the NEPA regulations at 40 CFR § 1502.24 (“Methodology and scientific accuracy”) state:

Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix.

The FEIS violates NEPA because the Forest Service has not insured the reliability of data relied upon by the FEIS's models, and the Forest Service has not validated the models for the way the FEIS utilizes them.

Remedy:

Prepare a Supplemental EIS that properly establishes the reliability of data relied upon by the FEIS's models, and only uses models that have been validated by independent peer review for the way the FEIS utilizes them.

XXXIV. SCIENTIFIC INTEGRITY

A scientist from the research arm of the Forest Service, Ruggiero, 2007 states:

Independence and objectivity are key ingredients of scientific credibility, especially in research organizations that are part of a natural resource management agency like the Forest Service. Credibility, in turn, is essential to the utility of scientific information in socio-political processes.

Ruggiero, 2007 points out that the Forest Service's scientific research arm **is distinct** from its management arm:

The Forest Service is comprised of three major branches: the National Forest System (managers and policy makers for National Forests and National Grasslands), Research and Development (scientists chartered to address issues in natural resource management for numerous information users, including the public), and State and Private Forestry (responsible for providing assistance to private and state landowners). This article is directed toward the first two branches.

The relationship between the National Forest System and the Forest Service Research and Development (Research) branches is somewhat hampered by confusion over the respective roles of scientists (researchers) and managers (policy makers and those that implement management policy). For example, some managers believe that scientists can enhance a given policy position or management action by advocating for it. This neglects the importance of scientific credibility and the difference between advocating for one's research versus advocating for or against a given policy. Similarly, some scientists believe the best way to increase funding for research is to support management policies or actions. But, as a very astute forest supervisor once told me, "Everyone has a hired gun...they are not credible...and we need you guys [Forest Service Research] to be credible."

The Forest Service Manual (FSM) provides direction on how to implement statutes and related regulations. FSM 4000 – Research and Development Chapter 4030 states: "To achieve its Research and Development (R&D) program objectives, the Forest Service shall ... maintain the R&D function as a **separate entity** ... with clear accountability through a system that **maintains scientific freedom...**" (emphasis added).

Ruggiero, 2007 discusses the risk to scientific integrity if that separation is not maintained, that is, if politics overly influences the use of scientific research:

This separation also serves to keep conducting science separate from formulating policy and the political ramifications of that process. The wisdom here is that science cannot be credible if it is politicized. Science should not be influenced by managers, and scientists should not establish policy. This logic keeps scientific research "independent" while ensuring that policy makers are free to consider factors other than scientific understandings. Thus, science simply informs decision making by land managers. As the new forest planning regulations clearly state, those responsible for land management decisions must consider the best available science and document how this science was applied (Federal Register 70(3), January 5, 2005; Section 219.11(4); p. 1059).

The FEIS relies upon Samson, 2005 and Samson, 2006, who models habitat from the Forest Service's database to claim that the agency is maintaining viable populations of certain wildlife species. The FEIS also relies upon other habitat modeling, depending upon the species discussed. However, none of those models have been subject to independent scientific peer review, to validate them for the ways the FEIS analyses relies upon them. Agency experts such as F. Samson, and those on the Clear Creek Project Interdisciplinary Team **are** influenced by managers, and their inherent political positions.

A Northern Region project EIS (USDA Forest Service, 2007a) even notes the limitations of Samson's modeling methodology:

In 2005, the Regional Office produced a Conservation Assessment of the Northern goshawk, black-backed woodpecker, flammulated owl, and pileated woodpecker in the Northern Region (Samson 2005). This analysis also calculated the amount of habitat available for these species, but was based on forest inventory and analysis (FIA) data. FIA data is consistent across the Region and the state, but it was not developed to address site-specific stand conditions for a project area. In some cases, these two assessments vary widely in the amount of habitat present for a specific species. (P. 116.)

Sullivan et al. 2006 state that “Peer-reviewed literature ...is considered the most reliable mainly because it has undergone peer review.” They explain:

Peer review.—A basic precept of science is that it must be verifiable, and this is what separates science from other methods of understanding and interpreting nature. The most direct method of verification is to redo the study or experiment and get the same results and interpretations, thus validating the findings. Direct verification is not always possible for nonexperimental studies and is often quite expensive and time-consuming. Instead, scientists review the study as a community to assess its validity. This latter approach is the process of peer review, and it is necessary for evaluating and endorsing the products of science. **The rigor of the peer review is one way to assess the degree to which a scientific study is adequate for informing management decisions.**

Sullivan et al. 2006 contrast peer-reviewed literature with gray literature (such as Samson, 2005 and Samson, 2006,) which:

...does not typically receive an independent peer review but which may be reviewed in-house, that is, within the author's own institution. ...Gray literature, such as some agency or academic technical reports, ...commonly contains reports of survey, experimental or long-term historical data along with changes in protocols, meta-data, and the progress and findings of standard monitoring procedures.

As does Ruggiero, 2007, Sullivan et al., 2006 discusses the dangers of the “Politicization of Science”:

Many nonscientists and scientists believe that science is being increasingly politicized. Articles in newspapers (e.g., Broad and Glanz 2003) and professional newsletters document frequent instances in which the process and products of science are interfered with for political or ideological reasons. In these cases, the soundness of science, as judged by those interfering, turns on the extent to which the evidence supports a particular policy stance or goal. ...Politicization is especially problematic for scientists supervised by administrators who may not feel the need to follow the same rules of scientific rigor and transparency that are required of their scientists.

Agency expert opinion and gray literature relied upon in this FEIS is not necessarily the same as “the best scientific information” available. Sullivan et al., 2006 discuss the concept of best available science in the context of politically influenced management:

Often, scientific and political communities differ in their definition of best available science and opposing factions misrepresent the concept to support particular ideological

positions. Ideally, each policy decision would include all the relevant facts and all parties would be fully aware of the consequences of a decision. But economic, social, and scientific limitations often force decisions to be based on limited scientific information, leaving policymaking open to uncertainty.

The American Fisheries Society and the Estuarine Research Federation established this committee to consider what determines the best available science and how it might be used to formulate natural resource policies and shape management actions. The report examines how scientists and nonscientists perceive science, what factors affect the quality and use of science, and how changing technology influences the availability of science. Because the issues surrounding the definition of best available science surface when managers and policymakers interpret and use science, this report also will consider the interface between science and policy and explore what scientists, policymakers, and managers should consider when implementing science through decision making.

As part of their implicit contract with society, environmental scientists are obliged to communicate their knowledge widely to facilitate informed decision making (Lubchenco 1998). For nonscientists to use that knowledge effectively and fairly, they must also understand the multifaceted scientific process that produces it.

Science is a dynamic process that adapts to the evolving philosophies of its practitioners and to the shifting demands of the society it serves. Unfortunately, these dynamics are often controversial for both the scientific community and the public. To see how such controversies affect science, note that over the last decade nonscientists have exerted increasing influence on how science is conducted and how it is applied to environmental policy. Many observers find this trend alarming, as evidenced by several expositions titled “science under siege” (e.g., Wilkinson 1998; Trachtman and Perrucci 2000).

To achieve high-quality science, scientists conduct their studies using what is known as the scientific process, which typically includes the following elements:

- ▲ A clear statement of objectives;
- ▲ A conceptual model, which is a framework for characterizing systems, stating assumptions, making predictions, and testing hypotheses;
- ▲ A good experimental design and a standardized method for collecting data;
- ▲ Statistical rigor and sound logic for analysis and interpretation;
- ▲ Clear documentation of methods, results, and conclusions; and
- ▲ Peer review.

NEPA states that “Accurate scientific analysis... (is) essential to implementing NEPA.” And the NEPA regulations at 40 CFR § 1502.24 (“Methodology and scientific accuracy”) state:

Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix.

The FEIS violates NEPA because the Forest Service has not insured the professional and scientific integrity of the FEIS's analyses.

REMEDY:

1. Prepare a Supplemental EIS that properly establishes the reliability of data relied upon by the FEIS's models, and only uses models that have been validated by independent peer review for the way the FEIS utilizes them.

XXXV. INCONSISTENCY WITH TRAVEL MANAGEMENT REGULATIONS AND FOREST PLAN ROADS AND TRAILS STANDARDS. The FEIS does not demonstrate project consistency with the Travel Management Regulations at 36 CFR § 212.

The June 3, 2013 comments on the DEIS from Friends of the Clearwater, the Alliance for the Wild Rockies, and the Lands Council asked: “How does the DEIS meet the direction to establish a minimum road system?” The Forest Service responded, “A transportation analysis was conducted on the project following guidelines to determine a minimum road system. This resulted in about 100 miles of roads to be proposed for decommissioning, including the SF/WF Clear Creek Roads EA.”

But the Clear Creek Roads EA project⁹ only decommissioned 9.6 miles of National Forest System (NFS) roads. (Clear Creek Roads DN at 2). The rest were 73 miles of “non-system skid trails or jammer roads.” (Id.) There was no mention of “minimum road system” and nothing resembling a statement to the effect that the project was even addressing the Travel Management Regulations at 36 CFR § 212 in that EA.

It's not that it isn't important to restore non-system skid trails and jammer roads—we recognize that in some cases those roads may have been equally damaging to the watershed as the NFS roads, or even moreso. But in only decommissioning 9.6 miles of NFS roads the agency hardly made a dent in its annual road maintenance budget. This is especially important because forestwide, roads are not being maintained as needed: “Congressionally appropriated road maintenance funding is approximately 9% of what is needed for the current classified road system.” (Nez Perce National Forest Roads Analysis Report, 2006.) In failing to disclose that fact in the FEIS and analyzed its implications for the project area, the FEIS violates NEPA.

The FEIS states: “Watershed improvement projects associated with the Clear Creek Integrated Restoration project include: 10 miles of system road decommissioning, 73 miles of non-system road decommissioning... Most of these projects have already been implemented.” So the FEIS conflates decommissioning associated with the above-mentioned Clear Creek Roads EA project—which was authorized already in 2011—with road decommissioning “associated with the Clear Creek Integrated Restoration project!

⁹ Decision Notice signed August 3, 2011.

The Nez Perce National Forest admits:

Some arterial, collector and local roads are not being maintained to specified standards. In some areas the road system will continue to degrade and this will affect future access to areas served by these roads. (Nez Perce National Forest Roads Analysis Report, 2006.)

On March 3, 2000, the Forest Service proposed to revise 36 CFR Part 212 to shift emphasis from transportation development to managing administrative and public access within the capability of the lands. The proposal was to shift the focus of National Forest System road management from development and construction of new roads to maintaining and restoring needed roads and decommissioning unneeded roads within the context of restoring healthy ecosystems.

On January 12, 2001, the Forest Service issued the final National Forest System Road Management Rule. This rule revises regulations concerning the management, use, and maintenance of the National Forest Transportation System. Consistent with changes in public demands and use of National Forest System resources and the need to better manage funds available for road construction, reconstruction, maintenance, and decommissioning, the final rule removes the emphasis on transportation development and **adds a requirement for science-based transportation analysis**. The final rule is intended to help ensure that additions to the National Forest System road network are those deemed essential for resource management and use; that construction, reconstruction, and maintenance of roads minimize adverse environmental impacts; and that **unneeded roads are decommissioned** and restoration of ecological processes are initiated. (Emphases added.)

The Clear Creek FEIS does not incorporate the required science-based transportation analysis, and so there was no assessment that identified the unneeded roads.

The Nez Perce National Forest Roads Analysis Report also acknowledges:

Some roads are causing adverse impacts, such as sedimentation in streams, wildlife impacts, and reduced access due to landslides, and should be evaluated for mitigation projects at the sub-forest level.

Roads in streamside or valley bottom locations disrupt the riparian areas through constriction, removal of woody debris and shade, introduction of sediment, reduction in leafy primary production, and through increased hazard of introduction of toxic pollutants to the stream.

Roads can alter physical channel dynamics, including isolating floodplains, constraining channel migration, and movement of large wood, fine organic matter, and sediment. This happens most at road-stream intersections and where roads are within close proximity to streams. Of the 3873 miles of National Forest system roads, approximately 23 percent exist within 300 feet of stream channels.

Wolverines are the most sensitive MIS species to motorized access. They typically inhabit remote mountainous areas where human disturbance is lower. Wolverines typically avoid human disturbance and roaded landscapes.

Standing and down dead wood is important to pileated woodpecker and marten habitat. Roads facilitate the removal of these habitat components for firewood. A major implication is that some MIS habitats are likely underused.

The Nez Perce National Forest has not yet completed its Travel Analysis Process (TAP) as mandated by the Travel Management Regulations. Since the TAP is to be a science-based process, Friends of the Clearwater's August 27, 2014 Travel Analysis letter to Forest Supervisor Rick Brazell, cited scientific information including Wisdom, et al. (2000):

Our analysis also indicated **that >70 percent of the 91 species are affected negatively by one or more factors associated with roads.** Moreover, maps of the abundance of source habitats in relation to classes of road density suggested that road-associated factors hypothetically may reduce the potential to support persistent populations of terrestrial carnivores in many subbasins. Management implications of our summarized road effects include the potential to mitigate a diverse set of negative factors associated with roads. **Comprehensive mitigation of road-associated factors would require a substantial reduction in the density of existing roads as well as effective control of road access in relation to management of livestock, timber, recreation, hunting, trapping, mineral development, and other human activities.**

...Efforts to restore habitats without simultaneous efforts to reduce road density and control human disturbances will curtail the effectiveness of habitat restoration, or even contribute to its failure; this is because of the large number of species that are simultaneously affected by decline in habitat as well as by road-associated factors.

(Emphases added.) No doubt Wisdom, et al would be highly skeptical of this “Integrated Restoration Project, absent its complete failure to genuinely minimize roads.

Friends of the Clearwater's August 27, 2014 Travel Analysis letter is incorporated within this Objection, and is included as Attachment 7.

Whereas the FEIS fails to recognize the need to identify and implement a Minimum Road System in the project area, members of the ID Team fully recognize the need—it just didn't make into the FEIS. Here are some of those concerns:

From 110606TransportationNFMAQuestions.docx:

2. What is broke or at risk?

The existing size of the transportation system is in excess of what is needed for current uses of the National Forest land. Newer technologies require a less invasive road system structure. A history of skid road or jammer road use, and not properly stabilizing roads has lead to a higher risk of failure by landslides and culvert washouts. These risks are even higher in landslide prone landscapes.

Another concern with the large transportation system is that it is cost prohibitive to maintain. The Forest cannot currently maintain all of the transportation system. Currently higher priority roads are being maintained to minimal standards, while other roads are not being maintained and have deferred maintenance. Roads with reduced maintenance or no maintenance are at a higher risk of failures and road closures.

More than 50 percent of the Nez Perce National Forest roads were built between 1960 and 1979. Road standards used during construction of these roads employed current BMPs. The life span of BMPs range anywhere from 10 to 50 years with repeated maintenance, so it is likely that many BMPs installed during original construction are at the end of their life span. BMPs productivity and life spans are reduced if maintenance has not occurred. Roads with BMPs near or at the end of their life span have a higher risk of failure.

4. How do you fix it?

Analyze all the system and non-system roads in the area and determine a minimum road system required based on needs and risks. Maintain roads needed for public and administrative use. Prioritize the repair of the needed roads based on risk and needs. Update all needed roads to ensure existing standards are met. Updates may include reconstruction, relocation or maintenance of roadways so they are in a stable condition. During the updates, use BMPs for minimal impact on the watershed.

Decommissioning roads no longer needed for access, that are temporary in nature, that are causing environmental damage or that are redundant.

9. What are the social / resource implications of no actions?

With only limited road maintenance and no decommissioning, roads will fail causing irreparable resource damage. Road fill and culvert failures will have an impact on stream quality. Public safety is also a concern with no action. To protect individuals from failing roads, road closures would be a common occurrence. Limited to no maintenance leads to structure failures of culverts, bridges and road fills. As road densities in the assessment area are considered high, by no action, there will be a continued adverse affects on the wildlife.

10. What are some of the foundational elements used in shaping your responses?

Nez Perce National Forest Plan

Selway Middle Fork Subbasin Assessment

CFR 36, Part 212, Travel Management Rule - Subpart A

Interior Columbia Basin Assessment

(Emphasis added.)

From 111017WildlifeClearCreekNFMAComments.docx:

What's broke / at risk (threats) (this is all based on roads which are likely the largest cumulative effects out there. I believe we need to manage motorized uses in identified "sacrifice areas" and restrict motorized use in high quality habitats. I believe there is demand for a restricted roaded setting for hunters to use roads in a non-motorized setting.

From 110606NFMAQuestionsKaren.docx:

What's broke / at risk

Roads are the major contributor of sediment to streams, especially at stream crossings.

Ditchlines can direct flow and road surface sediment into perennial streams at crossings.

These can be a chronic (ongoing) source of sediment to streams. Culverts at crossings are mostly undersized which greatly increases the risk of plugging and failure. Crossing failures can contribute large amounts of sediment to streams. They can be costly to fix and the sediment delivered to streams can take decades to flush out of the system. Road failures also disturb existing vegetation and expose bare soil to potential erosion until the site heals.

110606TransportationNFMAQuestions.docx

Road densities are calculated at the 6th Field HUC or sub-watershed scale. There are four sub-watersheds in the assessment area; Middle Fork Clearwater River – Big Smith Creek, Upper Clear Creek, South Fork Clear Creek and Lower Clear Creek.

The table below shows the road densities and categories for each sub watershed.

Name	Road Density	Category	Comments*
Middle Fork Clearwater River – Big Smith Creek	2.97 miles/square mile	High	38 % of HUC outside of Assessment Area 56 % of Roads outside of Assessment Area 12 % of HUC outside of FS Jurisdiction 21 % of Roads outside of FS Jurisdiction
Upper Clear Creek	3.04 miles/square mile	High	3 % of HUC outside of FS Jurisdiction 4 % of Roads outside of FS Jurisdiction
South Fork Clear Creek	2.25 miles/square mile	High	0 % of HUC outside of FS Jurisdiction 0 % of Roads outside of FS Jurisdiction
Lower Clear Creek	3.26 miles/square mile	High	73 % of HUC outside of FS Jurisdiction 63 % of Roads outside of FS Jurisdiction

Forest Plan Roads and Trails Standards state:

1. Develop an "Area Transportation Analysis" prior to entering drainages with land-disturbing activities.
2. Analyze the economics of proposed access developments using proven tools, and incorporate them into the project design.
3. Evaluate all facilities using the Access Management Analysis Worksheet to determine use restrictions and access needs. This worksheet will be an integral part of the Decision Document.
4. An Access Management Plan will be implemented to monitor and evaluate the effects of access on forest resources and the ability of the transportation system to accomplish the designed use. As measuring or monitoring tools, Forest access management will use two indices to monitor change over time. These indices will allow us to compare between points in time, between areas, and between alternate access management schemes or proposals.

The FEIS fails to demonstrate compliance with all these Standards, in violation of the Forest Plan and NFMA. The FEIS violates the Travel Management Regulations at 36 CFR § 212. It also violates NEPA by failing to use the best available science, and by failing to disclose project inconsistency with the Travel Management Regulations.

REMEDY:

1. Complete the science-based Travel Analysis Process (TAP) as required by regulations.
2. Prepare a Supplemental EIS that incorporates the completed forest-wide TAP and includes alternatives that implement the minimum road system, and that complies with Forest Plan Roads and Trails Standards.

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